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The MANUFACTURING CONFECTIONER

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Vol. 7 389.8
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MARCH, 1927

No. 3



*Marshmallow
Edition*

DELF

THE VIKING BRAND

Perfect Gelatine

Our cap laboratories' Delph scientists are constantly working over their products to make gelatine for you which will meet every possible need.

DELF this year has achieved even higher standards than ever before—GELATINE that is consistent, uniform, beautiful, transparent, absolutely correct.

*Maintain the quality of your products
by using DELF GELATINE.*

DISTRIBUTORS

ALABAMA

Wholesale—The Alabama Chemical Co., Inc., 100 North Exchange Street

CALIFORNIA

Los Angeles—The California Chemical Co., 100 North Exchange Street
San Francisco—The California Chemical Co., 100 North Exchange Street

CANADA

Toronto—The Canadian Chemical Co., Ltd.

ILLINOIS

Chicago—The Illinois Chemical Co., 100 North Exchange Street
St. Louis—The Illinois Chemical Co., 100 North Exchange Street

MAINE

Bangor—The Maine Chemical Co., 100 North Exchange Street
Portland—The Maine Chemical Co., 100 North Exchange Street

MASSACHUSETTS

Boston—The Massachusetts Chemical Co., 100 North Exchange Street
Worcester—The Massachusetts Chemical Co., 100 North Exchange Street

MICHIGAN

Ann Arbor—The Michigan Chemical Co., 100 North Exchange Street
Lansing—The Michigan Chemical Co., 100 North Exchange Street

THE VIKING BRAND



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Entered as Second-Class Matter October 24, 1922, at the Postoffice at Chicago, Illinois, under the Act of March 3, 1879. Published Monthly. Subscription Price \$2.00 Annually.

The Answer to Overproduction:

THE overshadowing menace of the confectionery industry today has induced price cutting, and its attendant evils, in a vain effort for survival.

Now, if ever, must energies be directed to the production of quality confections which rise above competition and command prices commensurate with their excellence.

Mechanically perfect candies, daintily colored, artistically designed and tastefully presented, will get over with the aid of proper advertising—and *get over to stay* if they are *accurately flavored* after the *modern manner*. If they are not, the entire effort is expended in vain, for they *won't repeat*.

*We have been making good flavors
for over fifty years.*

Age doesn't spell excellence, of necessity, but we have progressed steadily and have continued to lead where we originally pioneered.

What do you make—hard goods—creams—caramels—chewing gums? It doesn't matter! We have a set of flavors specially designed for each.

*Let us know your problem. Our advice and samples
are free and carry no obligation. Send for our new
catalog and observe the completeness of our line.*

FRITZSCHE BROTHERS, INC.

"A FLAVOR FOR EVERY PURPOSE"

82 Beekman Street
NEW YORK

118 West Ohio Street
CHICAGO

TORONTO

Fritzsche Brothers of Canada, Ltd.
93 Church Street

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The Manufacturing Confectioner's Approved Advertising of Confectioners' Machinery and Supplies

and Miscellaneous Advertising Directed to Manufacturing Confectioners

POLICY: THE MANUFACTURING CONFECTIONER is essentially a manufacturers' publication and therefore is a logical advertising medium only for confectioners' supplies and equipment. The advertising pages of THE MANUFACTURING CONFECTIONER are open only for messages regarding reputable products or propositions of which the manufacturers of confectionery and chocolate are logical buyers.

This policy **EXCLUDES** advertising directed to the distributors of confectionery, the soda fountain and ice cream trade. The advertisements in THE MANUFACTURING CONFECTIONER are presented herewith with our recommendation. The machinery equipment and supplies advertised in this magazine, to the best of our knowledge, possess merit worthy of your careful consideration.

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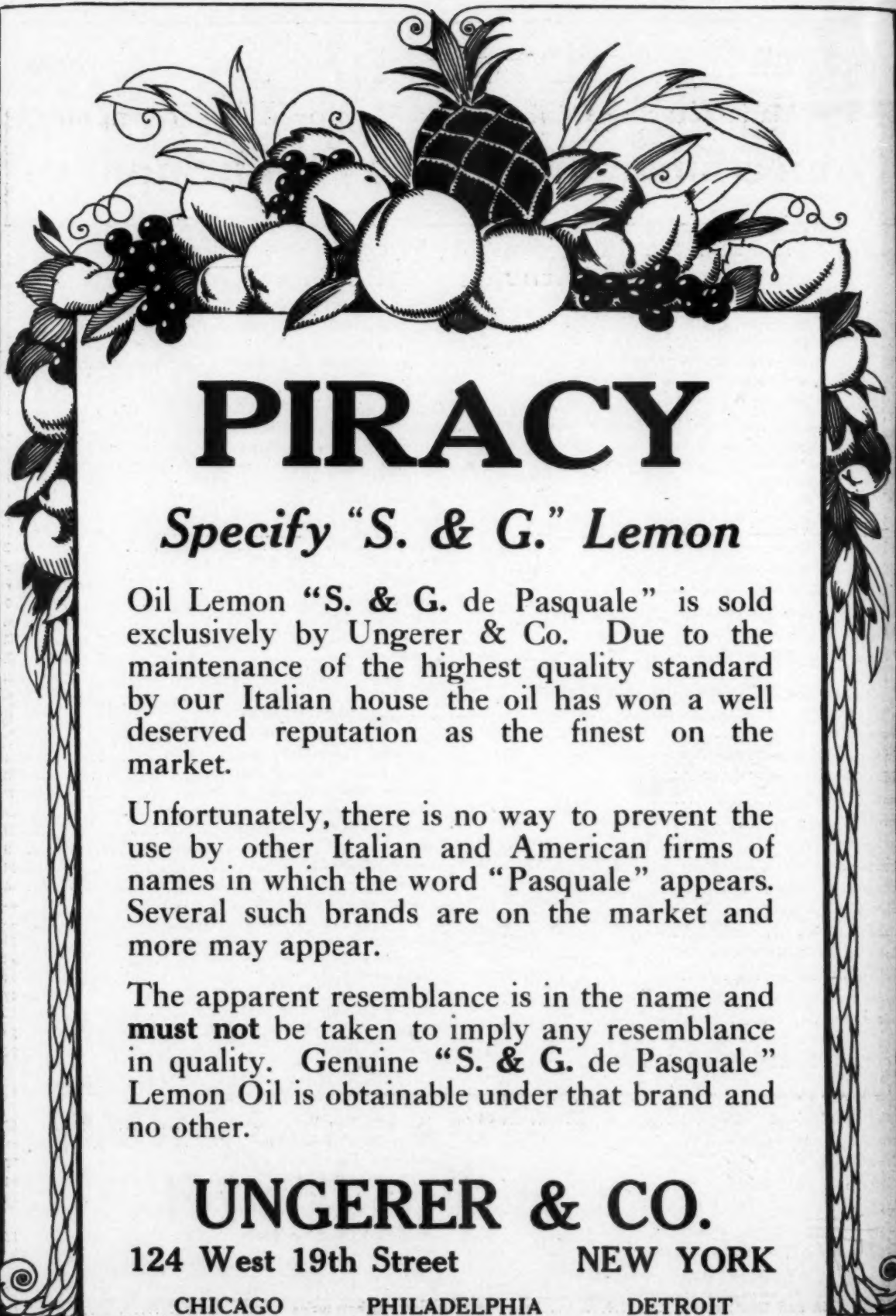
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PIRACY

Specify "S. & G." Lemon

Oil Lemon "S. & G. de Pasquale" is sold exclusively by Ungerer & Co. Due to the maintenance of the highest quality standard by our Italian house the oil has won a well deserved reputation as the finest on the market.

Unfortunately, there is no way to prevent the use by other Italian and American firms of names in which the word "Pasquale" appears. Several such brands are on the market and more may appear.

The apparent resemblance is in the name and **must not** be taken to imply any resemblance in quality. Genuine "S. & G. de Pasquale" Lemon Oil is obtainable under that brand and no other.

UNGERER & CO.

124 West 19th Street

NEW YORK

CHICAGO

PHILADELPHIA

DETROIT

"isolate"

*—means Supreme Strength
and Utmost Delicacy in*

ORANGE and LEMON FLAVORS

THE much discussed strength and delicacy of our New Process ISOLATE Orange and ISOLATE Lemon come entirely from the absence of any elements that in ordinary "oranges" and "lemons" reveal their confusing presence while concealing their actual identity.

ISOLATE Orange and ISOLATE Lemon are in fact, poetic though it may sound, the very "souls" of sun-ripened tropical fruits, *isolated*—all by themselves—The true flavor essence of perfect fruits. ISOLATES are changeless and ageless; terpeneless, true, and permanently of the same appealing character—now or years hence—in the original shipping container, or in your fresh made or long stored finished product. Super-concentrated for economy and convenience. Of standardized strength for interchangeable use without change in your formulas.



Since giving "Original Terpeneless Citrus Concentrates" to the trade back in 1885 we have perfected a full line of other super-extracts ideally fitted for each flavor use. Our entire capital, personnel and laboratories are devoted to the manufacture of SOLUBLE concentrates. We maintain a modern research department for solving your flavor problems. Consider the Foote & Jenks representative in his true capacity—a Service-man eager and able to assist you.

ISOLATE Orange and ISOLATE Lemon are, definitely, the only existing means for giving an unchanging, full, genuine, ripe-fruit, entirely natural flavor in your manufactured goods. Thanks to our exclusive process, our specialized methods and large volume production, ISOLATES are low in price.

Write for trial gallons and for detailed facts concerning increased benefits resulting from their use.

FOOTE & JENKS
Flavor Specialists
JACKSON, MICHIGAN

SAVE LABOR AND STOP WORRIES

MANY thousands of dollars are expended needlessly each year through following the old methods of producing soft centers.

These needless losses are from the excess labor required and from scrap, also loss of prestige when the candies are not up to standard.

Today, through the use of Convertit these losses and their accompanying worries, can be forever banished. The full story of the use of Convertit is told in our booklet "Convertit as used by the Modern Confectioner". A copy will be gladly sent to you on request.

Convertit has the endorsement of the best practical and scientific authorities in the candy industry.

ORDER A POUND
THIS QUANTITY IS SUFFICIENT TO
SOFTEN FROM FIVE HUNDRED
TO SIXTEEN HUNDRED
POUNDS OF
CENTERS

WHAT CONVERTIT IS

CONVERTIT is a yeast enzyme known as invertase. It is a practically colorless liquid. It comes packed in bottles or steel drums. The great value of CONVERTIT lies in its power to soften cream centers after they are coated with chocolate. Our booklet covers in detail the use of CONVERTIT under actual factory conditions.

Invertase has also been the subject of long study and research by the Bureau of Chemistry at Washington, D. C. and it is now fully recognized as a valuable scientific contribution to the candy industry—an outstanding example of the benefits to be derived from the cooperation of chemists and candy makers.

THE NULOMOLINE COMPANY

Exclusive Distributors of Convertit

109-111 Wall Street

New York, N. Y.

CONVERTIT

The highly concentrated invertase of standardized activity



California Blue Diamond Brand Shelled Almonds

To facilitate quick and economical deliveries to our many shelled-almond customers we are maintaining stock of the following mentioned varieties and packings of California Blue Diamond Brand Shelled Almonds, at both New York and Chicago:

<i>Variety</i>	<i>Packed Double Bags 160 Lbs. Net Weight</i>	<i>Packed 25 Lbs. Net Weight Boxes</i>	<i>Packed 5-lb. Cartons (Ten Cartons Per Case)</i>
Nonpareil Medium	45½c	47½c	48½c
IXL Medium	45½c	47½c
Ne Plus Medium	45c	47c
Nonpareil Sheller Run	44½c	46½c
IXL Sheller Run	40c	42c
Ne Plus Sheller Run.....	40c	42c

Above prices are per pound, net weight, either F. O. B. New York or F. O. B. Chicago

Considering present prices on imported shelled almonds, it will be observed that the above-mentioned prices on **California Blue Diamond Brand Shelled Almonds** are very reasonable.

"Medium" gradings are composed entirely of well-graded whole kernels.

"Sheller Run" gradings are guaranteed not to contain in excess of 25 per cent broken kernels.

Before being shipped, all of our Blue Diamond Brand Shelled Almonds are completely sterilized against the development of moth and worm through employment of the Vacufume System, using carbon bisulphide gas.

Upon request, we shall be glad to furnish type samples of any of the above-mentioned varieties of Blue Diamond Brand Shelled Almonds.

We sell only to jobbers and to wholesale manufacturing confectioners.

California Almond Growers Exchange
311 California Street **SAN FRANCISCO, CALIF.**

Hard Candy Flavors

"Fixed" To Resist Heat

WHEN you actually stop and *think* about the amazing results many hard candy manufacturers are enjoying through the use of these wonderful flavors, your good common sense suggests a thorough investigation at least.....

Suppose you start by trying *Raspberry*.

*We'll gladly send samples
and complete information.*

**FOOD MATERIALS
CORPORATION**

220-224 North Desplaines Street

CHICAGO



Castle Design
Made in 1, 2 and 3-lb. sizes, round.

American Can Company

NEW YORK

CHICAGO

SAN FRANCISCO

TRADE
CANCO
MARK

A Challenge to STOP

CONSCIOUS, toothsome glace fruits, as fresh as they were the day packed. That's how the metal package keeps them. Candy-lovers know that metal alone preserves them this way.

Many confectioners have packaged their glace fruit in Canco decorated metal containers—and with great success, so they tell us. First, they are sure their sweets will remain absolutely fresh; second, they realize the added sales advantages in a rich, colorful package that will appeal to Madame's love of beauty. Her eye can't resist it, especially since she knows it's such a sensible container.

THE illustration on the reverse page shows one of the attractive Canco stock designs, created especially for glace fruit. A Canco representative will be glad to talk with you in detail about the sales advantages of Canco decorated metal containers.

American Can Company

NEW YORK

CHICAGO

SAN FRANCISCO

TRADE
CANCO
MARK



SILKOTE

"A Super Creme"

The Positive Ripener
and
Trouble Eliminator
Prevents—

*Leaking
Souring
Bursting
Fermentation*

Eliminates Graining of Centers

Keeps Centers Moist and Soft
for an Indefinite Period

A fifty pound can, together with formulas and
full particulars, will be sent you on trial.

SETHNESS COMPANY

659 Hobbie Street
Chicago

1133 Broadway
New York

Floyd Parsons Says:

"With this knowlege in hand, engineers have succeeded in producing indoors any climate that might be desired. This means that we can now take the climate to the industry instead of having to take the industry to the climate."

[From "Where Romance Begins" in Saturday Evening Post, issue of March 12, 1927]

We Bring the Climate to Your Factory

**By Producing Ideal Atmospheric Conditions for
Chocolate, Hard Candy, Starch and Storage Depts.**

*Our Expert Engineering Service
is at your disposal*

BENTZ Engineers, air conditioning specialists, have for the past decade concentrated their studies on the production problems of the confectionery industry, knowing that there is an ideal atmospheric condition for the manufacture of each kind of candy.

The Bentz CHILLBLAST (our patented

air conditioning apparatus embodying most modern engineering principles) is recognized as standard equipment throughout the confectionery and biscuit industries for maintaining just the desired degree of humidity and temperature in each department which requires special atmospheric condntions.

Remember

The Bentz "COLDBED" is the accepted standard for producing chocolate coated goods; over 500 Coldbeds in use in candy and biscuit industries. May we send illustrated literature on modern chocolate packing room practice.



FREE: Engineering Service

Our qualified refrigeration and air conditioning engineers will make an unbiased survey of your manufacturing conditions and requirements with recommendations for your consideration; no charge or obligation for this service—just say when.

Photo courtesy Thinshell Candies, Inc., Chicago

Packing plastic goods in vacuum sealed jars in packing department equipped with a Bentz "Chillblast" which maintains the desired degree of temperature and humidity the year around.

Over 100 million packages
per day are wrapped on
our machines



THIS picture gives you some idea of the wide variety of products that are wrapped on our machines—and the resourcefulness of the organization that designed and built those machines. No matter what your wrapping problem may be, bring it to us. . . . Solving problems built our business

CHICAGO
111 W. Washington Street

PACKAGE MACHINERY CO., SPRINGFIELD
MASSACHUSETTS

NEW YORK
30 Church Street

METAL MOLDS

ASTER IS THE TIME FOR BUNNIES, EGGS, AND NEW BONNETS. WE OFFER YOU, MR. CONFECTIONER, METAL MOLDS FOR MAKING HOLLOW CHOCOLATE FIGURES OF THESE AND MANY OTHER DESIGNS WHICH WILL BE ATTRACTIVE TO YOUR CUSTOMERS.

INCREASED SALES MEAN INCREASED PROFITS

OUR CATALOG ILLUSTRATES MANY NEW DESIGNS OF METAL MOLDS SUITABLE FOR EASTER AND OTHER OCCASIONS IF INTERESTED, SEND FOR CATALOG No. 3 F.

ORDER THROUGH YOUR JOBBER.

No 7587

No 8000

Easter Day April 17th

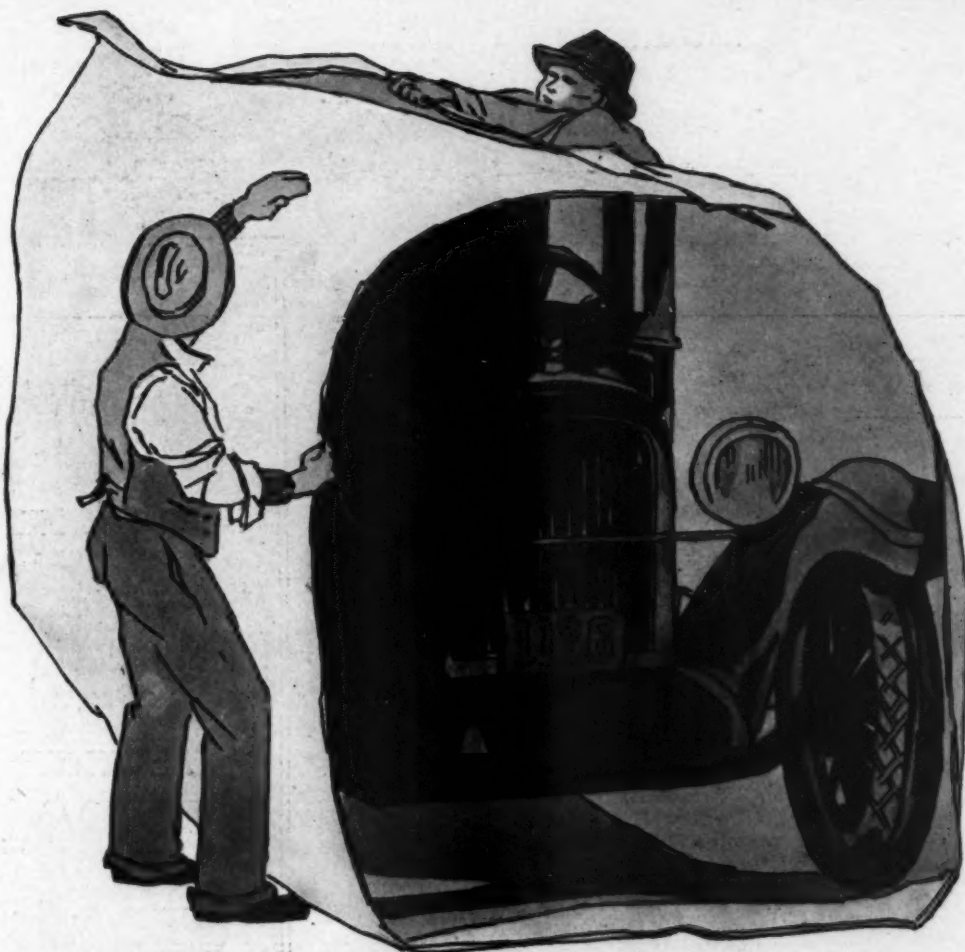


No. 8000 RABBIT 17" HIGH MADE HOLLOW WEIGHS ABOUT 2 LBS. CHOCOLATE. A GOOD WINDOW DISPLAY PIECE THAT CAN BE SOLD.

No. 7587 BONNET MOLD MAKES A PLAIN HAT WHICH CAN BE TRIMMED WITH RIBBON OR FLOWERS.

No. 8002 EGG SHAPED BOX (BONBONNIERE) MAKES A HOLLOW CHOCOLATE BOX WHICH CAN BE FILLED WITH CANDIES.

EPPELSHEIMER & CO.
34 44 HUBERT ST. *Manufacturers* NEW YORK CITY

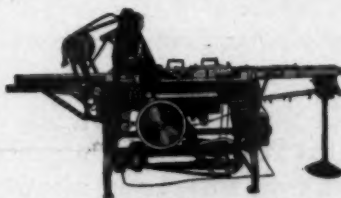


If automobiles were wrapped in *paper*

you would find that the operation of wrapping would be regarded by the automobile manufacturer with the same attention to detail which he gives to any other phase of his production problem.

As a matter of fact, there is no reason to suppose that wrapping is not an essential part of the production problem in your own business; a part which deserves to be set upon the same high plane of efficiency as any other step in manufacturing.

And in this connection, do not forget that AMF engineers have developed, for many industries, automatic wrapping machinery of superhuman capabilities. They offer you more than a particular machine; they are prepared to study your problem and, if necessary, to develop a complete system of wrapping to meet its special requirements.



AMF Automatic Wrapping Machine

American Machine & Foundry Company, 5502-5524 Second Avenue, Brooklyn, New York

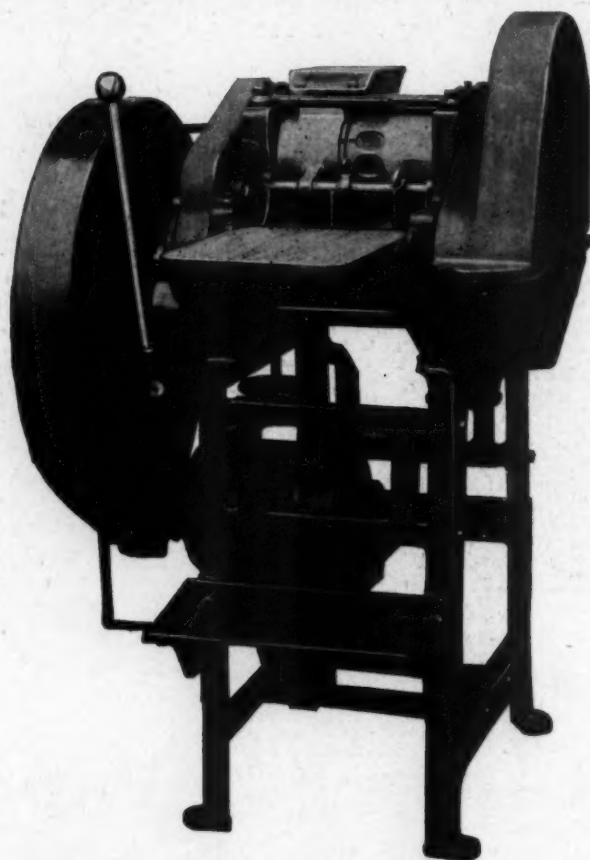


Wrapping Machines



Racine Automatic Sucker Machine

(PATENTED)

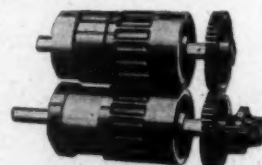


This is the machine that made the "all day sucker" the most popular form of hard candy in America.

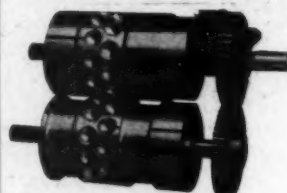
The latest model pictured above represents years of gradual development and because of the variety of its products it is practically a complete hard goods equipment in itself.

It is supplied with pulley for belt drive or with motor direct connected as illustrated. The length of conveyor is optional but 24 feet with air tunnel and motor driven blower is the accepted standard.

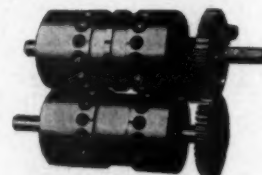
Note the variety of products made by these interchangeable rolls.



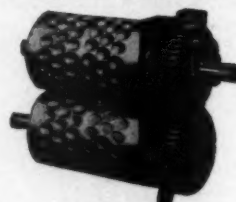
STANDARD SUCKER ROLLS
Candy on one end of the stick



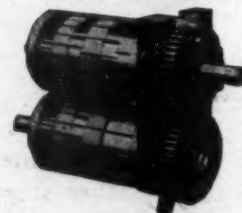
DUPLEX SUCKER ROLLS
Two suckers at a time



DUMBELL SUCKER ROLLS
Candy on both ends of stick



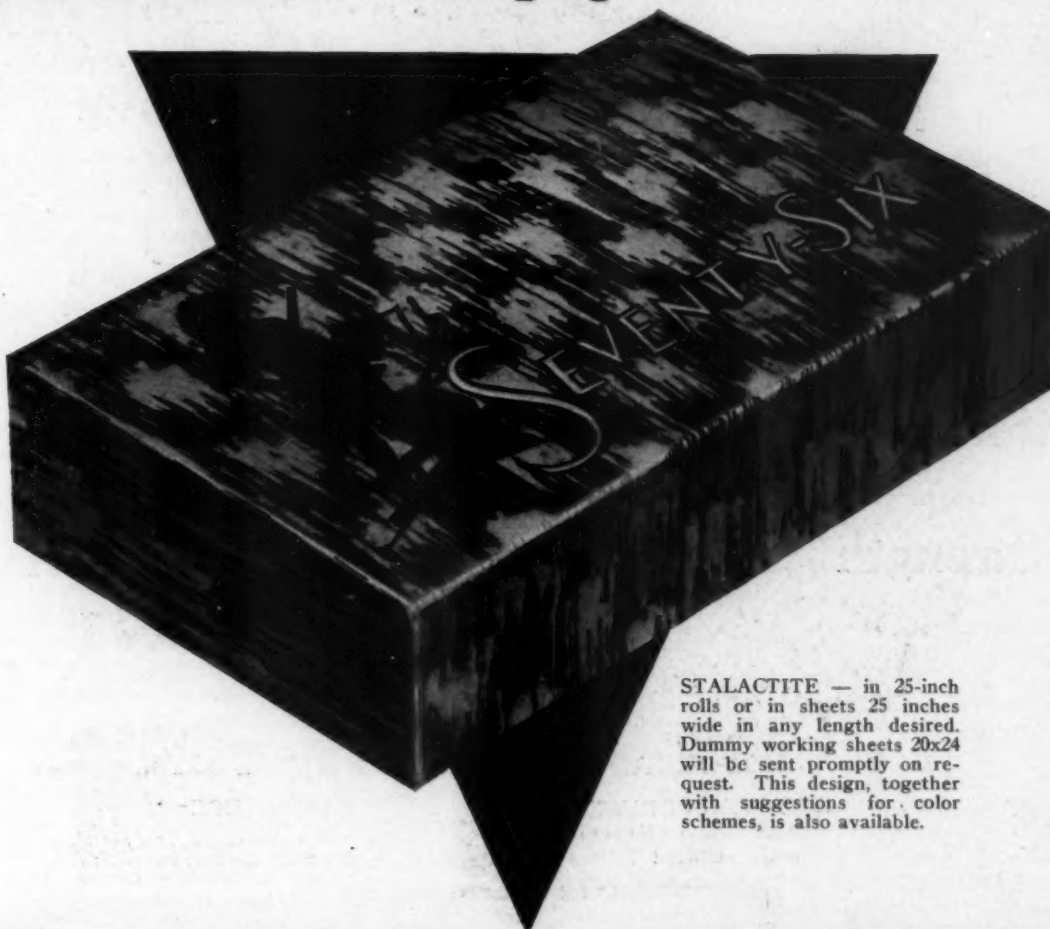
DROP ROLLS
Engraved as desired



CUTTING ROLLS
Waffles and Satin Finish Goods

RACINE CONFECTIONERS' MACHINERY COMPANY
RACINE, WISCONSIN, U. S. A.

Up-to-the-Minute Packaging



STALACTITE — in 25-inch rolls or in sheets 25 inches wide in any length desired. Dummy working sheets 20x24 will be sent promptly on request. This design, together with suggestions for color schemes, is also available.

Hampden Fancy Box Papers

EFFECTIVENESS for the special day—the appropriate thing for timely sales and quick response—all depend upon the package covering. Hampden Fancy Box Papers give the broadest possible variety of choice in pattern—shade—texture or coloring.

Hampden Glazed Paper & Card Co. HOLYOKE, MASS.

James A. Leyden,
301 Fifth Ave.,
New York City

Chicago Office and
Warehouse
500 So. Peoria St.,
Chicago, Ill.

HAMPDEN GLAZED PAPER & CARD CO., Holyoke, Mass

Please send sample working sheets of STALACTITE—as shown
in Manufacturing Confectioner.

Name
Company
Address
M.C.

J. A. Stuckey,
487 Bourse Bldg.,
Philadelphia, Pa.

Charles A. Kears,
200 Davis St.,
San Francisco, Cal.

First Producers of Certified Colors

(ATLAS CERTIFIED COLORS — scientifically prepared to meet the needs of the highest type of confectioners and for every purpose in the confectionery industry — particularly for plastic and clear hard candy work.)

Uniformity

Purity

Strength

Solubility



Food Color Headquarters for Fifty Years

FIFTY YEARS AGO WE PRODUCED THE FIRST HARMLESS FOOD COLORS used in the United States

(after long study by experts of their physiological effects—the first and only work of this kind ever undertaken on coal-tar colors), and after establishing their harmlessness for food, every batch was tested before being distributed. This was 30 years before certified colors came into use, of which we were the FIRST PRODUCERS. We have never yet failed to prove any official wrong who claimed to find objectionable colors in our customer's goods. No manufacturer ever suffered through the use of them. We were largely instrumental in halting opposition of important officials when the present Food and Drug Act was before Congress, who would have forbidden all food coloring if they could.

CONFIDENCE

The Progressive Manufacturer can only establish a quality product by using the best material; there are no ingredients in which confidence in the producer is so absolutely necessary or important as in Colors and Flavors. Our 75 years of business experience is a guarantee of quality products, and a sound basis for your confidence.

COLORS FOR PLASTIC WORK

Atlas Cert. New Rose

" " Marseline Orange

" " C. D. M. Green

" " Mauvine

" " 514 Brown

and many others, which will produce those beautiful and delicate shades of nature.

GENUINE FRUIT EXTRACTS

Our Genuine Fruit Extracts are not only so-called, but the product of the actual fruit whose name they bear.

The production processes are by special apparatus and methods which retain and preserve all the finest and most delicate esters and aromas of the finest selected fully ripe fruit picked where the most luscious of its kind is grown.

We shall be glad to have an order for pint samples and suggest our wonderful Genuine Fruit Strawberry and Raspberry Extracts.

H. KOHNSTAMM & CO., Inc.

Established 1851

11-13 East Illinois Street
CHICAGO

Factory:
537-555 Columbia St., Brooklyn, N. Y.

83-93 Park Place
NEW YORK, N. Y.

EDITORIAL

EARL R. ALLURED, Publisher

Subscription Price, \$3.00 the year. Single Issues 50c.

**A Specialized Technical and Commercial Magazine
for Confectionery Superintendents, Purchasing
Agents and Executives.**

Published Monthly on the 15th by
The MANUFACTURING CONFECTIONER PUBLISHING CO.
30 North La Salle St., Stock Exchange Bldg.

CHICAGO

New York Office, 5 Cortland Street, R. W. Younie, Mgr.
Phone: Cortland 2156

Good Bye and Good Riddance to the Fighting 69th!

"THE Fighting Sixty-ninth" is the term which the press has aptly bestowed upon the session of Congress just ended. Its closing hours marked by vote-bartering, fistie encounters and a malignant filibuster which completely suspended the business of the government in the interest of a selfish minority, its demise came none too soon for the frayed nerves of a sadly betrayed and disillusioned public. It has done those things which it ought not to have done and left undone those things which it ought to have done.

Threats of political reprisal combined with the questionable practice of trading votes on pet measures, resulted in both Houses of Congress passing one of the most colossal pieces of economic tinkering ever projected by a peace-time democratic government. The McNary-Haugen Bill would have subsidized the surpluses of the major American crops at the expense of the tax-paying public. The prices of all important farm staples would have been artificially maintained at high levels through the treacherous expedient of "dumping" the surplus on foreign markets regardless of price.

Only at this end of the line would the price be fixed. With the farmer guaranteed a profit, the mounting agricultural production would remain unchecked; living costs would be forced to still higher levels while we are sending huge quantities of foodstuffs abroad to be sold for a song.

Commodities such as corn syrup, sugar, starch, flour and other articles important

to our industry would be similarly marked up by the government subsidies on the raw materials, and the exportable surplusage, dumped on the foreign market for what it would bring, would reappear at our doors for entry into this country in the form of competitive candies with which we could not hope to compete. An analogous situation would obtain in our own industry, if instead of our limiting production to the point of balancing the demand, we were to leave it to the government to take over our accumulated surplus of manufactured stock and to sell it abroad for a few cents a pound in order that every candy manufacturer in the country might be guaranteed ten cents a pound profit.

Fortunately for ourselves as individuals and for the country at large, we had an executive in the chair possessed of both the courage and the shrewdness to defy the menacing lobby of the mid-west farmers and veto this insane piece of legislation.

The passage of the McNary-Haugen Bill was only one of a series of blunders which may be charged to this session. In furtherance of the West Coast agricultural interests, the Senate passed a bill requiring that nuts, raw fruits and raw vegetables imported into this country and repacked must be labeled with the country of origin. Tea having been inadvertently included in the classification of imported products requiring country-of-origin branding, Senator Hiram W. Johnson wrote to the Tea Association as follows:

"This bill was designed for the protection of the California walnut growers and arrangements are being made for its amendment in such form that it will not discriminate against firms handling coffee and tea and similar products."

The inference may be drawn that the amended bill will discriminate against firms handling other products. This miserable catering to selfish minorities while letting the major businesses of the government go unprovided for, has been characteristic of the blustering, pugilistic, filibustering Sixty-ninth. What mattered it if World War veterans and Civil War widows did not receive their pensions? Let 'em starve! What matter if the failure

(Continued on Page 56)

Cocoa Beans Soar to New Highs Under Impetus of Trinidad Failure

INDIGNATION meetings are no longer the vogue on the floor of the Cocoa Exchange. Our stirring editorials are no longer read in open forum amid cries of "Libel!" "Traitor!" and "Sue him!" Like some guilty child, fearful lest his conscience pursue him, the mad mullahs of the ring are seriously attempting to restore the dignity of the exchange by quietly ignoring all the unpleasant things which have been said about it. Whispering cliques form here and there, giving the place somewhat the air of a Ladies' Aid Society, where gossip spreads quickest under the seal of confidence.

An under-cover search goes on relentlessly for the squealer, the dictaphone, or whatever it is, that dogs their every action both on the exchange and off. Yes, there must be a leak somewhere; perhaps it is a disgruntled manufacturer, tired of being made the buffoon of the dealers; perhaps it is a broker, envious of their penny-profits; then again, it may be one of the dealers themselves, emerging from the morass disgusted with their petty foibles and treacheries.

The unusually heavy crop movements of the past four months have been gradually but steadily absorbed without causing more than a temporary recession of half a cent in the price of Accras. Daily, some desperate manufacturer has stood wavering at the brink—his stock depleted, his customers clamoring for the last drop of blood—before casting himself upon the mercy of the dealers.

The persistent demand of these bone-dry manufacturers, some of the largest of them with only a scant two weeks' supply on hand, whipped to the point of frenzy by the unprecedented condemnation of the Department of Agriculture, have kept the market hungry for more and more cocoa.

Suddenly, out of a clear sky, came the report that one of the big Trinidad shippers had failed—in fact, not only failed but skipped the country leaving behind him a sad wake of ill-advised short-sales aggregating perhaps a million and a half dollars. Evidently, he, too, had taken one of those Cocoa Exchange correspondence

courses edited by our friend Wessels. This shipper's sales of some 50,000 bags of Trinidad cocoa had been made (for the most part) to the New York dealers, who had in turn *resold* the cocoa at substantially lower than the prevailing levels. These fine resales, instead of showing them a decent speculative profit, now stood to lose them almost half a million dollars!

Word of this tragedy spread through the pulsating market like wildfire, striking terror into the ranks of the once-exuberant dealers. For some of the weaker ones, stark ruin stalked in the offing. Only one thing to do. Into the market headlong they plunged to cover their sales and limit their losses. Wild buying of actual Trinidads jerked the price up from 16¾ to 17¾c—almost overnight. The rise of 150 points carried the whole market with it. Here, then, was the spark predicted in our editorial of last month's issue—the unexpected incident which was to pull the market out of its seeming lethargy and send prices again whirling giddily upward.

Panic-stricken dealers, those who had somehow managed to escape the Trinidad undertow, hurriedly dispatched representatives to the producing districts to investigate the status of their contracts and determine the chances of their being fulfilled. The smug complacency of a month ago has given way to a genuine alarm.

One of the least savory aspects of this unpleasant situation is the persistent rumor that one of our biggest chocolate manufacturers has signed a secret agreement with the Combine, enabling this firm to procure cheap cocoas in return for buying support in the American market. Such an arrangement would of course enable them to undersell all competition from whatever source while at the same time maintaining an active demand and high market for the raw material which every other manufacturer must buy. It would have the effect of squeezing the other manufacturers at both ends and eventually put some of them out of business.

Whether such an agreement definitely exists, is naturally difficult to ascertain, but the activities of that organization in flooding the trade with 17c coatings and

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Marshmallow as a Food

by C. Robert Moulton

Department of Nutrition, Institute of American Meat Packers

Dr. C. Robert Moulton, the author of this article, is a recognized national authority on nutrition. He is author of many scientific papers in the field of animal nutrition. He is joint author with Prof. Armsbey of a scientific monograph, "The Animal as a Converter of Matter and Energy," recently published under the auspices of the American Chemical Society. When the Institute of American Meat Packers was organized, Dr. Moulton was called to direct the Department of Nutrition.

WHY should one write of the food value of such a delectable tid-bit as a marshmallow? Why, indeed, mix prose with poetry?

A marshmallow is its own sufficient reason for existence and needs no justification. Any one who has toasted this delicacy over a fire on the beach or in the dunes on a summer night or in the fireplace on a winter night and thus enjoyed this rare treat, will agree that no commonplace facts concerning its calorie content will add anything to its appeal. Yet food value and healthfulness are words to conjure with in making an appeal to the consumer, for everywhere one meets the facts of nutrition—in advertisements, on billboards or car cards, in magazines and newspapers, and, last but not least, over the radio.

I am not one of those who believe that candy has no place in the diet, especially in the diet of young children; that the use of such appealing and flavorful sweets should be discouraged or prevented; and that the diet should consist only of mild and bland foods. It is, of course, wise to use bland foods with foods of more flavor or the palate will become jaded and the appetite abnormal. It is also wise to govern with discretion the use of candy by the child. Candy should not be used in such quantities and at such times that a lack of appetite for the more valuable foods of a regular meal results. Candy can be used best after a meal, for a pick-me-up between meals, or as a reward for good conduct on the part of the child.

It is a fact that children, athletes, and other active people frequently require a source of rapidly available energy. Fatigue that results from continued bodily activity can readily be relieved by the eating of sugar or candy. The relief is more rapid

than in the case of food such as bread or milk, for the candy needs little or no digestive change to make it available. On the other hand the bread and milk last longer and supply some things not found in candy, at least those candies made without milk.

The marshmallow's chief value as a food, or, if you prefer, as a confection, lies in its calorie, or energy, content, as is the case with candy in general. Marshmallows contain about 1,500 calories to the pound. Some other candies may contain from 1,700 to 1,800 calories. The various flavors, textures, and colors are by way of diversion and add to the "spice of life" without affecting the food value. In the case of the marshmallow, the sugars used furnish a mixture of sucrose, maltose, dextrose, and dextrin. The first three are sugars and the fourth a substance allied to sugars on one side and to starch on the other. The dextrose is absorbed and used by the body without digestive change and with little or no delay. The sucrose and maltose require but slight digestive changes, while dextrin requires somewhat more attention on the part of the digestive apparatus. Thus, this mixture of sugars supplies energy of slightly varying availability somewhat more lasting in its effects than dextrose alone.

The consistency of marshmallows is quite different from that of hard candies or of the fondant of the filled candies. Its total sugar content is almost as high. Why, then, does not the marshmallow show a grain when eaten, or otherwise give evidence of its sugar content? This is prevented by the gelatine used in its manufacture to the extent of two to three per cent. Gelatine acts as a protective colloid and

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The Marshmallow Problem

Some Practical Suggestions Regarding the
Production of Marshmallows Based on
Results of Research by Essex Fellowship

by *Werner W. Duecker, Ph. D.**

THE meat packer, the canner, the baker, the miller, and the manufacturer of carbonated beverages, among many other industrialists, have brought about improvements in their products and have been able to practice economies due to the fact that they have called the methods of scientific research into use in the study of their manufacturing practices and products. An attempt is being made at Mellon Institute to apply these same principles to a study of the uses and applications of gelatine in the confectionery industry. The first subject of this research is the confection known as marshmallow. The results of this study will be published in detail as they become available for release. In this paper we will indicate what may be expected from this investigation and offer a few general observations of interest to the manufacturer of this confection.

Marshmallow Defined

The word marshmallow, which, at one time, designated one particular product, has come to cover a whole series of more or less related confections. Essentially marshmallow is a foam consisting primarily of cane sugar or glucose or a mixture of these sugars and usually gelatine. Depending upon the method of preparation and the relative proportions of sugars, many varieties of marshmallows may be prepared. These different varieties are known as moonshine or grained marshmallows, white cast marshmallows, chocolate-coated marshmallows, sanded marshmallows, and cut marshmallows. And then, of course, there are marshmallows in which the stabilizing or emulsifying agent is something besides gelatine, such as gum arabic, agar agar or Jap gelatine, or egg albumen.

Criteria of Excellence

Regardless of how many varieties of marshmallows there are, it is possible to

*Essex Fellow, Mellon Institute of Industrial Research, Pittsburgh, Pa.

set up a standard for each type. Unconsciously this is done by the manufacturer when he compares his product with that of a competitor. Each manufacturer talks of color, tenderness, feel, hardness and texture, but these terms are all relative and may have different significance in the minds of different persons. For that reason there has been devised by the writer a series of tests by means of which it is possible to evaluate or judge accurately a given marshmallow of a specific class according to its life, texture, tenderness, chewiness, color and keepability. A detailed description of these tests will be published in a subsequent article. By their use it is possible to determine precisely the part that each separate ingredient plays in the manufacture of marshmallow, and it is an easy matter to grade accurately the different types and kinds of marshmallows that are on the market.

The Ideal Marshmallow

The ideal marshmallow, regardless of kind, should be judged according to the following criteria: Count, color, texture, surface or complexion, keepability, sweetness, characteristic odor, and flavor. It should be capable of being manufactured by a comparatively simple process and should be uniform. The volume of the goods produced or the count should be sufficient to warrant its production. The exterior of the marshmallow should be white and finely grained and the interior should be a bright silvery white. It should possess the proper texture and keep in all kinds of weather. Usually the marshmallow should possess considerable life; that is, when pressed or squeezed between the fingers it should regain its original shape when released. It should break fairly short and should have that particular quality known as eatability. It should be sweet. It should be non-sweating and should not become sticky during proper storage. It should have a characteristic marshmallow

odor and flavor, and finally it should be capable of being manufactured simply and uniformly.

Count

Each of the separate constituents of the marshmallow contribute some particular quality to the finished product. The volume of the batch or the count which can be obtained from a given weight of materials is dependent upon a number of factors. Given the same weight and kind of materials, it has been found that the volume of a given batch is dependent upon the temperature at which the beating is carried out. Generally it is found that the volume of a batch will not increase very perceptibly if the temperature is much above 100° F. As the temperature of the batch falls, the volume increases accordingly. Secondly, the volume of the batch is dependent upon the speed at which it is whipped. A very high speed beater instead of increasing the volume will actually break the foam and cause it to shrink. A low speed beater will bring about the formation of the desired volume, but the time factor becomes too great. The speed generally used, about 250 r.p.m., is quite effective if one exercises care and checks the volume of the batch by weighing it at frequent intervals. After the batch has attained its greatest volume, it is quite a simple matter to beat it a few minutes longer and have it decrease. Confectionery manufacturers may often increase their capacities and yields appreciably by carefully watching the temperature of the batch and the time and speed at which it is beaten.

Color

The color of the marshmallow is dependent upon the ingredients as well as upon the size of the air cells which give life to the product. Unless due care is exercised, each of the separate ingredients may cause an off-color marshmallow. The one ingredient, however, which causes the most trouble is the glucose. Glucose being used in large quantities may give the marshmallow a yellow cast, due to its inherent dark color, or it may, because of its excessive acidity, bring about certain changes in the marshmallow which cause it to darken. A small quantity of a certified blue color may often brighten the color of marshmallow. It is, however, useless to exercise extreme care in the choice of raw materials and then use a colored flavoring material in the production of a white marshmallow.

Texture

The texture of the marshmallow is dependent upon a number of variables: first, upon the mechanical treatment it receives, and secondly, upon the composition of the marshmallow. The size of the air cells in the marshmallow are mainly dependent upon the speed of the beater. If they are large, the marshmallow is very short and possesses little life. If the air cells are too small, the marshmallow is tough. by beating at the right temperature and at the correct speed, medium-sized air cells are produced and the marshmallow has both life and a certain amount of shortness. As is generally known, cane sugar, invert sugar, egg albumen, and starch contribute to the shortness of a marshmallow.

Gelatine and the quantity of water used in the preparation of marshmallow have a decided effect upon its texture. Each of the three principal kinds of gelatine contribute some particular quality to marshmallows. Pig skin gelatine, probably due to the fact that it does not retain its full strength on dilution, causes marshmallow to be soft and to have slightly less life than do marshmallows made from other gelatines. Calf skin and bone gelatine set very rapidly, impart peculiar resilience to marshmallow and give appreciable strength. As is commonly supposed, it is not essential to use a high test gelatine in order to make a marshmallow of good quality. Good gelatine of medium strength can be used to considerable advantage in that much latitude may then be had in the treatment of the batch.

Surface Complexion

Without an efficient starch dryer no one can make a really delectable marshmallow. The moisture content of the moulding starch and its temperature are very important factors. The delicate surface of sugar crystals which protect the marshmallow can be materially altered by using starch of different moisture content and of different temperatures. The formation of this grained surface is dependent upon the rate at which the moisture leaves the marshmallow and upon the composition of the marshmallow. The rate at which a marshmallow loses moisture is in turn dependent upon the water content of the marshmallow, the moisture content of the starch and finally upon the temperature of the starch. The higher the temperature of the starch and the lower its moisture content, the more rapid the grained surface of the marshmallow will form. If the tem-

THE MARSHMALLOW PROBLEM

perature of the starch is too high, then the marshmallow will not set. By varying either of these factors any kind of surface may be formed on the marshmallow.

After the marshmallow has been deposited in the starch, it is usually covered with a fine layer of starch. It is well to realize that the starch used to cover the marshmallow should be dry and of the same temperature as the rest of the molding starch. It has been found that using starch of too high a temperature will cause the top of the marshmallow to fall and produce a sunken top.

After the marshmallow has been removed from the starch, it is always well to dust the product with powdered sugar or a mixture of powdered sugar and starch, so as to insure the complete formation of a surface crust. It is at this stage that precautions need to be exercised, as it is very evident that marshmallow, no matter how well it has been handled up to this point, can easily be ruined by exposure to extremely high relative humidities.

Keepability

The keepability of marshmallow is dependent upon its composition. Usually one supposes that a marshmallow made with a high glucose content will not keep

as well as one in which the proportions of sugar and glucose have been carefully balanced. This, however, is not true, as it has been found that the rate at which a marshmallow made with varying proportions of sugar and glucose loses moisture is entirely dependent upon its initial moisture content. The keepability of marshmallow is determined by the rate at which it loses moisture. As the moisture content is reduced, changes such as crystallization or setting are induced and texture is materially changed. Invert sugar, which acts as a solvent for both glucose and cane sugar, retards these changes and gelatine has been found to be extremely effective in preventing the graining of marshmallow which contains a high sugar content. It has also been demonstrated that calf skin gelatine keeps marshmallows more satisfactorily than other gelatines.

Flavor

The sweetness of a marshmallow is determined solely by its composition. The odor of a marshmallow can be controlled by a careful choice of raw materials, it being essential that the gelatine selected should be wholesome and sweet. The flavor is controlled by a judicious use of flavoring materials selected particularly for marshmallow work.

¶ (“Influence of Humidity on Marshmallow” will be the subject of Dr. Duecker’s article in next issue.) ¶



Moulding and Dusting Starch

and Their Relation to Marshmallow Manufacture

by Dr. Howard File

Chief Chemist, A. E. Staley Manufacturing Co.

THE use of starch in the manufacture of marshmallows is one of the more important steps in the process. Its use does not differ much from its use in moulding any other confection. Nevertheless, the influence of moulding starches on the finished product are probably more pronounced than on most any other product the manufacturing confectioner produces—gum work, however, might be an exception.

The moulding and dusting starches are made by the manufacturer of products of corn in the same general way that all edible starches are made. This procedure is more or less familiar to most of the readers of this publication and a detailed description is not within the scope of this article. The process roughly is one of steeping the corn in water; washing and cracking the softened grains; grinding; washing the starch and gluten free from the fiber; separating the starch from the gluten; re-washing the starch; and finally drying it.

The important part in the manufacture of moulding and dusting starch comes after the crude starch is made, and has to do with the drying, redrying, bolting, refining and other especial treatment, and the properties that make a starch particularly suitable for casting are due to these methods of treating the starch after the crude starch has been produced.

Requirements of Good Moulding Starch

Starches suitable for casting marshmallows must be dry, of good absorptive properties, and compact or non-free-flowing. It must be dry, clean, and porous, in order to absorb the moisture from the freshly cast marshmallow and then give up the moisture absorbed to the air in the drying room. The starch must also have the property of holding the impression made by the moulds firmly so that the trays will stand reasonably rough handling. It must have this property without being heavy, soggy, or non-absorptive.

In order to absorb moisture efficiently

and withhold the moisture absorbed from being again taken up by the marshmallow, the starch must be low in moisture content at the time the marshmallows are being cast. The normal moisture content of starch is around twelve per cent, depending on the humidity of surrounding atmosphere. Consequently, if the moulding starch has been dried to seven and one-half per cent before casting and the marshmallows are cast in warm starch, it will absorb moisture from the marshmallows rapidly and in turn give the moisture off to the air in the drying room, provided the drying room has good circulation and the air is reasonably dry.

We all know that dry starch dust is explosive when suspended in dry air. Consequently, it is not practical to dry starch to seven per cent moisture and then powder it in a mill. For this reason such starches are dried to twelve per cent moisture, powdered in an impact mill, and then redried to seven per cent moisture content after having been powdered. The method used in redrying has its effect on the quality of the starches. If dried in a high vacuum, the starch is light and fluffy and may not take the impression of the mould so well.

Moisture Content and Conditioning of Starch

The question of what the proper moisture content should be can best be determined by the confectioner who knows his own local conditions. Starch having a moisture content as low as five per cent has been used, and on the other hand one containing ten per cent has been successful. A laboratory test has been made in which samples of starch having five, ten and twelve per cent moisture were exposed to a very humid atmosphere. Those containing five and ten per cent took up moisture at very nearly the same rate during the first twelve hours and at the end of twenty-four hours both contained within one per cent of the same amount of moisture. The sample containing twelve per cent contained the same amount as that containing

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The Marshmallow Forum

Informal Discussion on Marshmallow Problems

Conducted by Herman Lebeson

Consulting Chemist, Chicago



INVITATIONS recently were sent to a number of gelatine and marshmallow manufacturers to take part in a general discussion of production problems in confectionery marshmallows. We presented for this discussion the following outline:

1. The moisture contents of marshmallows.
2. Trouble due to wet starch.
3. Trouble due to poor gelatine.
4. Which is the best as well as the most economical gelatine for marshmallows—one of high or medium jelly strength?
5. What effect does the speed of beating have on the marshmallow?
6. Is there any inter-relation between the speed of the beater and the jelly strength of the gelatine?
7. Trouble due to unsanitary plant conditions.
8. Trouble due to poor packing.

No doubt these questions sound familiar to most of us. How many of us thought of them time and time again while waiting for the batch to beat up? Every foreman or superintendent has at one time or another been pressed hard for an answer to some of these questions.

Formula and procedures that were found successful under one set of conditions invariably need adjustment to yield similar results under a new set of conditions, and it is only through a clear understanding of the fundamental principles involved in the process of operation that the answer to these questions will be found.

That this view is becoming more and more prevalent in the confectionery industry is evidenced from the fact that in the numerous replies we received there was not a single request for a specific formula. The discussion is invariably carried on a higher plane, with a sincere desire to make this written conference helpful to all.

The letters we have received, which

incidentally come from North and South, East and West, are in themselves a tribute to the intelligence and broad vision of the men who wrote them, and a sign of confidence in the cooperative efforts of the men in our industry. We have reprinted herewith a few of the letters which bring out some particularly interesting points:

"Cambridge, Mass., Feb. 28, 1927.

Gentlemen:

In connection with your questionnaire regarding the manufacture of marshmallow:

We should be very interested to receive the result of your investigation. Our troubles, like those of most other manufacturers, have been partially due to the conditions of our starch and to the percentage of moisture in the batch. We have, in the course of time, corrected some of the conditions, with relation to our starch, and have learned not to expect a weak gelatine to hold too much water in suspension and that in using a strong gelatine, we are apt to make the goods tough.

We do not know that we have any specific questions to ask that would be of value in your investigation, but we intend to follow your results with care as we feel that we have still a lot to learn about manufacturing marshmallow.

Very truly yours,

THE GEORGE CLOSE COMPANY.

G. H. Bunton, Treas. and Gen'l Mgr."

BROCK CANDY CO.

"Chattanooga, Tenn., Feb. 24, 1927.

Gentlemen:

In reply to your letter of February 22, you will see that we are very much interested in the marshmallow 'conference.' We, like other manufacturers, have our troubles with marshmallow. Our biggest problem is starch, that is, starch being in the right condition, and we would like to know if there is any test which could be used on starch in detecting whether or not the starch is in the right condition to use.

If we could tell when the starch was in the right condition we could save scrap by eliminating crusting of marshmallows and picking up of starch by the marshmallow.

We would also like to know if it is possible to get the starch in the right condition to run, what other methods should be used in handling the marshmallow to avoid picking up of the starch and scaling. So, our chief problem comes from the starch and we would like very much to see

this discussed in the next issue of THE MANUFACTURING CONFECTIONER.

Yours truly,
W. E. BROCK, JR."

The only accurate way to tell whether starch is in the right condition for casting is to run a moisture test on it. If you have a chemical laboratory in your plant this test can be made by drying a two gram sample of starch for one hour at 135 C. (275° F.). (A small imported drying oven, designed to determine moisture in flour in 15 minutes was described in Cereal Chemistry, volume 3, p. 419.)

Dr. File's articles on confectionery starch in this issue will no doubt clear up your question on the conditioning of starch for marshmallow work.

"Traverse City, Mich., Feb. 24, 1927.

Dear Sir:

We think you are doing a great favor to the candy manufacturers in trying to solve the marshmallow question. No doubt many manufacturers have trouble making marshmallows which will not get hard or swell up after they are coated in chocolate.

Our experience has been that during the month of August we have more trouble with marshmallows breaking out of the chocolate coating than any other month in the year. We think it is due to the chlorine used in the water here, yet our health officer told us they did not use any more chlorine during August than at any other time.

The speed of our beater is 330 revolutions per minute. We find the slow speed makes marshmallow tough. We use all new dry starch, wet starch will form a crust. We think the medium strength jelly is the most economical for marshmallow. Poor gelatine, on the other hand, will not give marshmallows a body to hold up.

STRAUB CANDY CO.
Per J. G. Straub."

August is a critical month for marshmallows and creams. Generally the first thought is the possibility of fermentation due to an excess of moisture in the goods. However, your trouble may be due to chilling of the marshmallow before it is coated. This causes the goods to shrink. When the coated marshmallow is later displayed in the store on a warm day the center expands and breaks through the chocolate coating.

The observation that a slow speed produces a tough marshmallow is very important. It is borne out by many other observers reporting to this conference. However, the opinion, now twice expressed, that a medium strength gelatine is the most economical for marshmallows is met with a direct challenge in the following letter:

JOHN G. WOODWARD & Co.

"Council Bluffs, Iowa, March 2, 1927.

Gentlemen:

In reply to your letter of February 22nd, I would submit the following suggestions on the subject indicated by your questions:

No. 1. Moisture forms part of all confectionery, and there is nothing that gives more trouble. Therefore, great care should be taken as to its use. Water should be measured for each batch, so as to get the required amount. This is especially true in regard to marshmallows that are packed in cans. Too much moisture causes soggy goods, which become sour, and mould.

No. 2. Marshmallow needs dry cool starch. Goods run in damp starch generally have a coat of starch on the bottoms. Goods run in hot starch dry out quickly, and become tough, and dead, that is, they will not have any come-back, when you press them.

No. 3. The results from the use of poor gelatine are the same as from all other inferior materials—poor goods. Generally you will have to use so much that it will taste gelatine, and the finished product will be tough.

No. 4. High strength gelatine is always best in marshmallow. It takes less per batch, which makes it about as cheap, and produces shorter goods with a better flavor.

No. 5. The fact that marshmallow requires beating, would teach us that speed is required for lightness of goods, and saving of time.

No. 6. A good gelatine is the best in a beater at every speed, but speed them up for good marshmallows.

No. 7. There should not be such a place as an unsanitary plant. In regard to this, there is much to be said, but as to the manufacture of marshmallows, there is one vital point, and that is, beaters and utensils should be scrupulously clean, and sterilized before using, to prevent the formation of bacteria germs forming in the goods, which sometimes happens when you are ever so careful.

No. 8. A package well packed will open up to the dealer in good shape, and the impression it makes, generally determines whether it goes on display, or under the counter, so it is true, goods well packed are half sold. Uniformity is the big thing in packing, a certain number of pieces to the layer, and a certain number of layers in the package, so as not to crowd the goods too close, still not have them too loose. Pack goods well and avoid having them returned.

Hoping you will be able to find some points of interest, that you may use in the marshmallow conference of your March issue, I remain,

Yours sincerely,

(Signed) A. E. DEMPSEY."

Last but not least comes this letter from the Pacific Coast. It gives a clear and logical outline of the subject. It shows the work of a natural student who learned in

the school of experience, the importance of paying attention to detail:

"Los Angeles, Calif., Feb. 28, 1927.

There is not an item in the industry that is abused as much as marshmallows. There are so many different ways and methods of different manufacturers in making them. Some are good and some are bad, and I am sorry to say, in my opinion, they are mostly bad. In my humble opinion, there are just three or four rules that should be strictly observed in making a good marshmallow.

First of all there is the gelatine, which should be as clear as possible, free from sulphur dioxide and from liquefying bacteria. It should be tender and at the same time have the proper jelly strength. There are a number of good gelatines made in the United States and abroad. A good way is to get samples of gelatine with a pure food guarantee. Make your selection by testing for jelly strength and purity and insist on a laboratory test on every shipment that comes into your house. Check back on the seller every now and then to see that the gelatine is up to requirement.

Starch—The moulding starch should be nice and clean and dry at all times, with not over two per cent moisture contained. If cold process is used the starch should be cold. If boiled batches, the starch should be warm. In other words, the starch should be dry at all times and near the same temperature as the batch you are going to cast. Marshmallow should be made and removed from the starch after five hours.

Cold Process—Do not put too much in trays while taking from the buck. Dust well with a mixture of equal parts of four X powdered sugar and moulding starch. Cover trays and stand over night before packing.

Putting Up Batch—It is very important to train your help and insist on their using measures, scales and thermometers. There must be no guess work in marshmallows, and should not be in the making of any candy. While the batch is beating, draw off a pail full from the beater from time to time and return same. This will take care of any settling in the bottom of the beater and insure an even and uniform batch when finished. When you have a batch that you know is right and that your trade wants, during the process of the beating weigh an even gallon measure full and weigh same. I know how many pieces of the deposited goods run to the pound for the different moulds, and by weighing back a few of the batches each day you have a check on the candy maker. He sees you do this and it makes him careful to beat the batch right and weigh it according to directions.

Sanitary conditions should be maintained and insisted upon at all times. Rest assured that fermentation is always caused by filth, whether it be marshmallow or what not.

Beaters—There are quite a number of good marshmallow beaters on the market and I would hesitate to recommend any particular one. We have three different makes, but I prefer the —

beater. The beater must not run too fast as the friction will cause the batch to heat to the extent that will destroy the strength of the gelatine. While on the subject of gelatine again, let me say gelatine is insoluble in cold water. The gelatine should be weighed carefully, the amount used in each batch, and be soaked in enough cold water for one or two hours in a clean metal pail. Just before adding to the batch, put this pail containing the gelatine and water into another vessel containing hot water, and agitate for a few minutes. The gelatine will make a clear solution in water. Then pour in a steady stream into the beating batch. This is important in making good marshmallow.

Packing—Care should be used in the packing of marshmallow. After packed it should be well protected from the atmosphere and never stored in damp cellars or other like places.

The foregoing has reference to cast marshmallow. Am sending a sample by mail of two kinds. One the cold process which I prefer for all local and interstate business; the other is a boiled batch which goes to our export trade.

(Balance of letter deleted.)

BISHOP & COMPANY.

By Maxcy Ross, Supt. Candy Department."

"First Aid" Testing of Gelatine

Mr. Ross rightly emphasized the importance of testing every shipment of gelatine for jelly strength and purity. Whatever the grade of gelatine decided upon, whether it is high or medium in jelly strength, it is of the utmost importance that it should run uniformly true to the sample used in making this decision. The plant chemist is undoubtedly well acquainted with the standard methods of testing gelatine for jelly strength, viscosity, foam, ash, sulphur dioxide and toxic metals. He can also make a bacterial count, and look for gas forming and liquefying bacteria.

Plants not equipped with a chemical laboratory are naturally at a disadvantage in this matter. However, there is a certain amount of "first aid" work every superintendent or foreman can do if he is only willing to carry out the procedure as carefully as the chemist does.

To get a fairly accurate test of jelly strength, place two grams of gelatine in a glass of 150 cubic centimeter capacity and add 100 cubic centimeter of cold distilled water. Allow the gelatine to soak for thirty minutes, then place the beaker in a hot water bath at 140° F. Stir the gelatine slowly till it is dissolved. Let it stand in the bath for a few minutes while covered with a watch glass. Remove from the bath and let it cool to room temperature. Then place the glass over night in a refrigerator that is kept at about 55° F. Test the

firmness of the jelly by pressing with the fingers.

The precautions observed in this test are:

1. The gelatine and the water must be accurately weighed and measured.

2. The glasses must all be of the same shape and size.

3. All the samples must be tested under identically the same conditions.

While the gelatine is in solution make your observations on odor and taste. Also on its freedom from sand, dirt and insoluble matter.

A fair estimation as to its freedom from bacteria, and especially from liquefying bacteria, can be made under ordinary factory conditions by dissolving ten grams of gelatine in 100 cubic centimeters of sterile water in a sterile flask. Plug it up with cotton and let it stand for several days at room temperature. This gelatine solution should not be heated above lukewarm, otherwise it would be partly sterilized by the heat.

It must be remembered that these tests are only of a qualitative nature, and their value depends entirely on the skill and intelligence with which they are carried out.

And now, with all the returns in and accounted for, we come back to our original eight questions. Each one of these has been touched upon in this issue by one writer or another. The general problem was outlined and some highly valuable observations were made, and yet you feel that there is much about the manufacture of marshmallows we do not know *definitely*. There is not, for instance, sufficient data on the best jelly strength of gelatine for marshmallow to decide the question one way or another. Then some manufacturers praise their gelatine because it is acid in reaction, others because it is neutral. Since the gelatine in our case reacts in a

mixture of sugar, corn syrup, water, flavor and possibly other materials it seems that the real question is what is the best chemical reaction, or pH, of the marshmallow rather than of the gelatine before it is put into the batch. There has been nothing said about that.

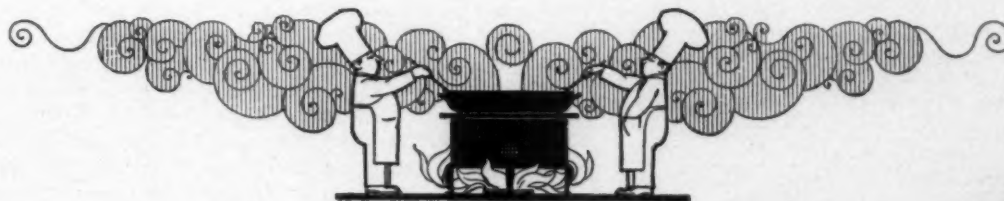
We have not considered the best rate of setting for a marshmallow gelatine. Its importance lies in this, that if the gelatine sets too quickly it will cause trouble at the depositor.

Then there are other emulsifying materials, such as egg white, gum arabic, or agar, that could be used in marshmallow alone or with gelatine. What effect would these combinations have on the tenderness, moisture retaining properties and graining off of marshmallows?

These and many other questions have not even been touched upon in this discussion, not because of a desire to dodge the issue, or minimize their importance, but out of a realization that there is not sufficient data available at the present time to warrant any conclusions one way or another. To quote one of the outstanding men in the gelatine industry:

"At the present time there are so many conflicting views regarding the use and qualifications of gelatine for marshmallow work that it is becoming a matter of vital concern to both the gelatine and marshmallow industries that research work be carried out to establish the facts and to expose ideas or theories not founded on experimental evidence."

A beginning for such work has been made at the Mellon Institute in Pittsburgh, and at the Dunwoody Institute in Minneapolis. Let us hope that during the ensuing year more of this work will be carried out, with full cooperation between the gelatine producer and the marshmallow manufacturer, to the best interests of both.





Selling Twenty Tons a Day. Not Steel— Marshmallows!*

*How a Weak Sister in the Candy Family Won
National Prestige When Sold as a Food Product*

An Interview by A. R. Hahn with

Ralph P. Hammond

Sales Manager, The Campfire Company, Milwaukee and Cambridge, Wisconsin

SHE wasn't the kind of a girl you could love for herself alone—this Cinderella of obscure lineage in the candy family.

Besides the scintillating talents of her beautiful bonbon and chocolate sister candies, her few really good points were embarrassingly minimized. Beside them, to be perfectly frank, she was certainly nothing for the big, handsome public to lose his heart over.

But having harbored no respect whatsoever for the traditions of her ancestors, Cindy has changed since then, and now witness her triumphant presence at the dinner tables of the Four Hundred; the fickle, discriminating public even showing

encouraging signs of being in love with her.

Such is the brief romantic history of the Campfire marshmallow.

And it is the purpose of this article to expose some of the mysteries behind her rise from non-entity to stardom in national popularity.

When a product multiplies volume five times in three years and in that same space of time runs production and sales up to twenty tons a day, it's a safe gamble to suppose someone has discovered a strong basic sales appeal and made hay in putting it across. Twenty tons of steel isn't much, but twenty tons of marshmallows is certainly one whale of a lot of marshmallows! It must be enough to pave the Lincoln Highway from Pittsburgh to Omaha.

And so I asked Ralph P. Hammond, who some

*Reprinted by permission of *Sales Management*.

day will probably be the patron saint of the marshmallow industry, how it all happened. And this is what he said:

Eat six or eight marshmallows in a row and you've had enough. But taste one tucked inside a strawberry shortcake, toasted atop a baked apple, married to diced pineapple in a salad, or melted down to a delicious soft topping in a cup of hot chocolate—and then you will appreciate the sense of a sales appeal, which from the beginning has been based on the marshmallow's affinity for other foods, rather than on its tastiness as a candy. The marshmallow's prime talent, in other words, lies in its ability to set off and dress up other things to eat.

Now It's a Food

Combined with foods, the marshmallow itself immediately became a food and it is in the light of this "interpretation" of it that intensive sales effort and national advertising have won it a country-wide market.

Six years ago the Campfire marshmallow was one item in a large line of candies. A separate division of the business was organized to promote sales on it, but the quality slumped, the company was caught with 32-cent sugar during the war, and other complications set in, until, by 1923, the company was tottering on the brink of bankruptcy. An entirely new company was then organized and divorced altogether from the parent candy company. Its capital was a product which bore a good name and a bad reputation.

What might be termed our "cornerstone" policy was the elevation of the Campfire to a quality product. We started out to concoct the very best marshmallow that could possibly be made. We installed apparatus in the factory so that the water used in our product would be distilled into perfect purity; a special type of gelatine was used; our starch was sifted through an extra fine silk screen to remove all impurities; even a special kind of vanilla was

made for flavoring. The result was a marshmallow which might have been food for the fairies—a creamy, delicious product of fine texture and snowy whiteness, a better product than we had ever made before.

The extra quality put into the Campfire marshmallow in this way meant that our price would have to be comparatively high. Ours is the high-

est priced marshmallow on the market today, with the single exception of a deluxe tin sold in small quantities strictly as a candy.

We believed that the only sound way to build a business was to establish and adhere to a one-price policy. This price must be high enough to insure profitable handling for the jobber and retailer, for it is hard to get these links in the chain of distribution to put any creative sales effort behind an item on which the profit is slim.

Distribution Policies

Profitable handling is our one big sales point for the jobber. Grocery jobbers, through whom the bulk of our output is sold, must handle many items on which they make only a very limited profit or none at all. Our product allows a wide enough margin so that the jobber can afford to push it. A parallel situation exists with the retailer.

As for the price to the consumer: it was our observation that, in other lines of business, there was a rich market for products on any one of several price planes. The Ford, the Buick, and the Cadillac are all making good by appealing to one range of buyers only. And we felt that while, of course, there would always be more or less of a market for the low-priced, unadvertised marshmallow, so also would there always be a vast section of

the American public which would be willing to pay a few pennies more to get a tin of marshmallows that were a little better. We couldn't sell the entire market, so we chose our public and stuck to them—and to our price.



"Your Price Is Too High!"

WHEN a prospect says, "Your price is too high—I can buy a dozen brands of marshmallows at half the cost of yours," this is what the Campfire marshmallow salesman flashes before his eyes. And around it he builds his quality sales talk, showing exactly WHY his marshmallows are superior.

The bottles contain a sample of each of the ingredients used in making the Campfire marshmallow; in one bottle the snow-white sugar of particular granulation is shown; in another is the pure white starch which has been dried and cleaned and aerated by modern automatic equipment—every cast being made in clean starch, uniformly dry, which has been sifted through a fine silk screen. In contrast to it is the bottle containing the wet starch and impurities thus removed from it. In another bottle is shown the gelatine, another the vanilla flavor. A sample of the highly refined corn syrup is shown in another one of these attractive display bottles.

Would skeptical buyers of YOUR product better appreciate its virtues if you told them and showed them exactly what is in it?

SELLING TWENTY TONS A DAY

I'll admit it takes real courage to cleave to a policy of this rigid character. But, to quote someone's very wise observation, we found that our quality article had everything in its favor, including the price.

Not a month ago we got a small order from a dealer in Ohio on whom our salesmen had been working for two years without getting a dime's worth of business. We followed up this initial order with another personal call; we were more than casually interested in this order because this particular dealer controlled distribution through a chain of stores.

Fighting the Price Battle

When we saw him he offered to give us an order for the chain if he could have a discount, pointing out that he could buy any one of several other kinds of marshmallows at a lower price. We turned down the order.

Not a week later his order for 80 cases came in through the mail. He wanted our marshmallows all right, but he was just too stubborn to give us the order when we were there.

In another city in the east, where the buying for a large group of retailers was controlled through a central association, we had been unable to close an order because of our one-price-no-discount policy.

We sent a special sales crew into this city and they called on individual dealers in the association without any effort whatsoever to get an order. But they did exhibit reprints of our national advertising and show the things we were doing to widen the uses for marshmallows in the kitchen. And they didn't forget the profits story. And so we dangled our carrots and created a yearning in the breasts of these retailers to have some Campfires on their shelves.

It wasn't long before pressure was exerted from the inside of the association to get Campfires—and soon they were buying at our price. These incidents just prove that temporary defeat on the price question may often, in the long run, spell permanent success, for it is certain that these stubborn buyers enjoy the profits they make on our product after they have once begun to buy it. Both buyers mentioned above are now among our steady customers.

Let's go back for a moment, to this conception of marshmallows as a food product rather than a candy. When our salesmen went out, in 1923, they were greeted by dealers with one standard apathetic comment: "Oh, another marshmallow!"

"No—a food!" was the answer. And our whole sales story hinged on the food idea. Almost immediately we started the energetic distribution of recipe books which described the use of marshmallows in salads, puddings, cakes, and many other dishes. This was done to great extent through dealers. When our salesman called, he very likely put a recipe book in each box of

groceries the dealer had ready for delivery. He left a stack of them in the store for customers who came in.

After our entry into national advertising in 1924, recipes were featured to the exclusion of all other copy. Color was widely used to stimulate the appetite appeal, and occasional prize contests were conducted for original recipes. We have learned this about coupon advertising: a woman would rather pay to get a book and a sample than to have a recipe book sent to her free.

Creative Work in Selling

At first we offered free recipe books and got a fair return. Then we charged four cents and returns increased. Now we make one of two offers: four cents for a book or ten cents for a sample and a book. The latter offer brings much the higher return.

Our salesmen are paid a higher commission on orders direct from the dealer than on jobbing orders. In fact, they get two commissions on business from this source; one on the retail order, an and over-writing commission on the jobber's covering order. We want our salesmen to concentrate on the dealer, in other words. Our problem with the dealer is usually to get him to see that there is a market for our marshmallows at our price—and after that, to show him how to create more and more marshmallow business among his regular customers. We want him to say to Mrs. Watson, when she buys head lettuce: "Wouldn't you like to take some Campfire marshmallows along for your salad? They combine deliciously with pineapple, for instance—or dates, or oranges."

Many of the bigger markets we have opened with special demonstrations managed by our salesmen. We had struggled with the buyer of one very large market for some time, who declared there wasn't a market for Campfires on the scale we claimed. He finally agreed to give us a window, some interior displays, and the opportunity to make a demonstration.

One of our salesmen put on a white coat and pitched in to help our demonstrator on the day appointed. He began weighing up one-pound sacks of marshmallows from a five-pound tin, while the demonstrator talked with customers. By noon they called for extra help. By 4 o'clock we rushed more marshmallows. When the sale was over, 1,200 pounds of Campfires had been sold.

Selling Big Quantities

A demonstration in Springfield, Massachusetts, sold 2,500 pounds in two weeks. Another in Dorchester, Massachusetts, sold 778 pounds over one week-end. A large department store in St. Louis offered three of our toasting forks (a premium plan we've used) free with a five-pound

tin over Hallowe'en week-end and sold approximately a ton of Campfires. The success of these special sales has shown our dealers the possibilities for a really big volume of business even on an article like marshmallows—and we are working now toward more sales in five-pound units.

One extremely simple display idea has given a big impetus to our sales. That was the creation of a "glass top" tin which showed the top layer of marshmallows. One of these display tops was included with every case of marshmallows, together with a small cardboard frame which the dealer could use to display a tin on his counter. There isn't anything complicated about the sales point involved: Mrs. Housewife comes into the grocery, sees the marshmallow tin and the product inside it looks white and fresh and appetizing. Result: she buys some. Before, she bought a sealed pasteboard box and took her marshmallows on faith.

An interesting sidelight on our sales plan is the work our home economics department has done in working with other manufacturers to promote our products as a combination. Tapioca is one

such product; condensed milk is another; breakfast foods, bananas, cocoanut, canned fruits and dates are still others.

The Ford Idea

Perhaps there is one big point I should have mentioned long before this: that is our policy of making but one product. Our two factories are devoted exclusively to the production of marshmallows. We were the first to specialize in marshmallows to the exclusion of all other products. We were the first to advertise the marshmallow nationally; we were the first to put it up in tins instead of boxes, and the first to feature the display idea for the retailer's counter. While there is a vast undeveloped field for us in selling marshmallow creams for cake frostings and for soda fountain use, I doubt if we shall ever make any other than marshmallow products. Like Henry Ford, we believe in making one product and making it well.

That is the main reason we're now making and selling considerably more than a million marshmallows a day.



Windows like these, devoted exclusively to display of Campfire Marshmallows and tied in with special effort and demonstration, have opened the eyes of skeptical dealers to big volume sales possibilities on something they had become accustomed to think of as an insignificant item.

The "Display top" featured by Campfire marshmallows helped to keep them on the dealers' counters and gave a corresponding big impetus to sales.



Announcing—a New Department.

Quality Through Sanitation

A series of discussions on modern sanitary and hygienic practices in the manufacture of confectionery and their significance in safeguarding the quality of manufactured goods

Five Danger Points in the Manufacture of Marshmallow

by Carey P. McCord, M. D.

of The Industrial Health Conservancy Laboratories

THE launching of an ocean liner and the manufacture of marshmallows are examples of very difficult feats carried out with such apparent ease and simplicity as to rob the acts of their spectacular features. In marshmallow manufacture, those fully conversant with procedures know that ease and simplicity are only apparent, and in actuality every step in the process is jeopardized by opportunities for spoiling. Some of the pitfalls leading to poor marshmallow are associated with sanitary practices. On the flow sheet of marshmallow production big red arrows should mark five points at which sanitary troubles are most likely to begin:

*The Water Supply.
The Gelatine Solutions.
The Beaters and Depositors.
The Moulding Starch.
The Packers' Hands.*

The Water Supply

In any community, the water supply utilized for human consumption should be suitable for marshmallow manufacture, without further treatment. This is not always true, even though the bacteriological count of water continually shows up as acceptable. Industrial waste may impart peculiar tastes to the water and to the marshmallow. The usual municipal water treatment does not remove these industrial substances. During some seasons of the

year, algae grow luxuriantly in highly rated waters. In some communities the chemical constituents of water, while entirely harmless may give rise to a tinge of color in marshmallow uninviting to the consumer. For these reasons recently distilled water should be used in marshmallow work. A distilling plant on the premises is the most satisfactory source of supply. Distilled waters obtained from other sources are acceptable when properly protected. At no time should distilled waters be stored in open containers, lest they become contaminated.

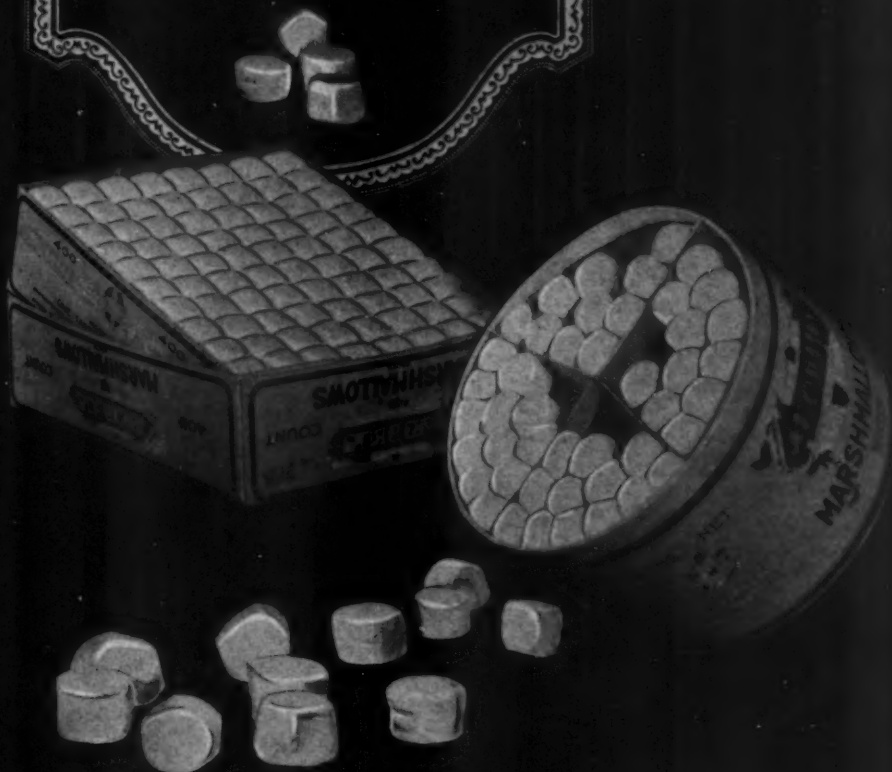
The Gelatine Solutions

One of the foods used by bacteriologic laboratories for the cultivation of bacteria is gelatine. However, the gelatine must be moist to serve in this capacity. In marshmallow manufacture the same circumstances exist. The dry granular gelatine contains relatively few bacteria, but when solutions are made, a rich opportunity exists for the propagation of harmful life forms. The longer gelatine solutions stand, the greater the hazard. Failure to completely clean vessels used for this purpose paves the way for the perpetuation of contamination. Protection is obtainable through very simple methods:

- (a) *Use a high grade of gelatine.*
- (b) *Use gelatine in a readily dissolvable form.*

(Continued on Page 55)

*Modernize
Your
MARSHMALLOW
Department*



This Golden

**E.H.
EDWARDS**

Says~

E. H. Edwards Co.
SPECIALTY MANUFACTURERS OF
MARSHMALLOWS AND FUDGES

227-231 WALSTON AVE.
CHICAGO February 23, 1927.

TELEPHONE
SUPERIOR 9881
5822-9823

Franklin Baker Company,
15th & Bloomfield Streets,
Hoboken, N. J.

Gentlemen:

We enclose herewith signed contract covering
our requirements on Toasted Coconut for 1927.

We appreciate the prompt service and uniformity
in quality of your Golden Toasted Coconut. To this
quality we attribute to a great extent the large volume
of business in our ROASTY TOASTY MARSHMALLOWS in which
these goods are used.

Thanking you for an acknowledgment and trusting
that our relations will continue to prove of mutual benefit,
we are

Yours very truly,

E. H. EDWARDS COMPANY

E. H. Edwards
President.



de **Toasted Coconut** will also increase your **Marshmallow Volume**



EDWARDS has made his large marshmallow business secure by establishing a recognized quality product. The uniform attractive appearance and fresh nutty flavor of his *Roasty Toasty Marshmallows* has been accomplished by the constant use of our

GOLDEN TOASTED COCONUT

"The Economy Nutmeat"

It is not fair to the future of your organization to use "bargain" lots of *Toasted Coconut*, or attempt the preparation of "*Toasted*" in your own plant from Imported Coconut.

Secure the pre-eminence of your *Toasted Marshmallows* by using Baker's Coconut, the attractive appearance and delicious flavor of which cannot be excelled.

Write for experimental samples and attractive prices

Franklin Baker Company

Hoboken, New Jersey

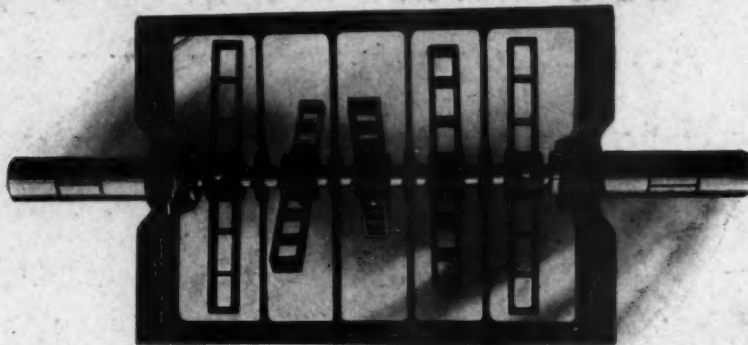
Canadian Address
Franklin Baker, Ltd.
20 Bates Road, Outremont, Montreal

**Golden
Toasted
Coconut**
is
a specialty
topping
prepared by
the makers
of
**Gem
Imported
Coconut**

It's in the Beater

—The Heart of your
Marshmallow department

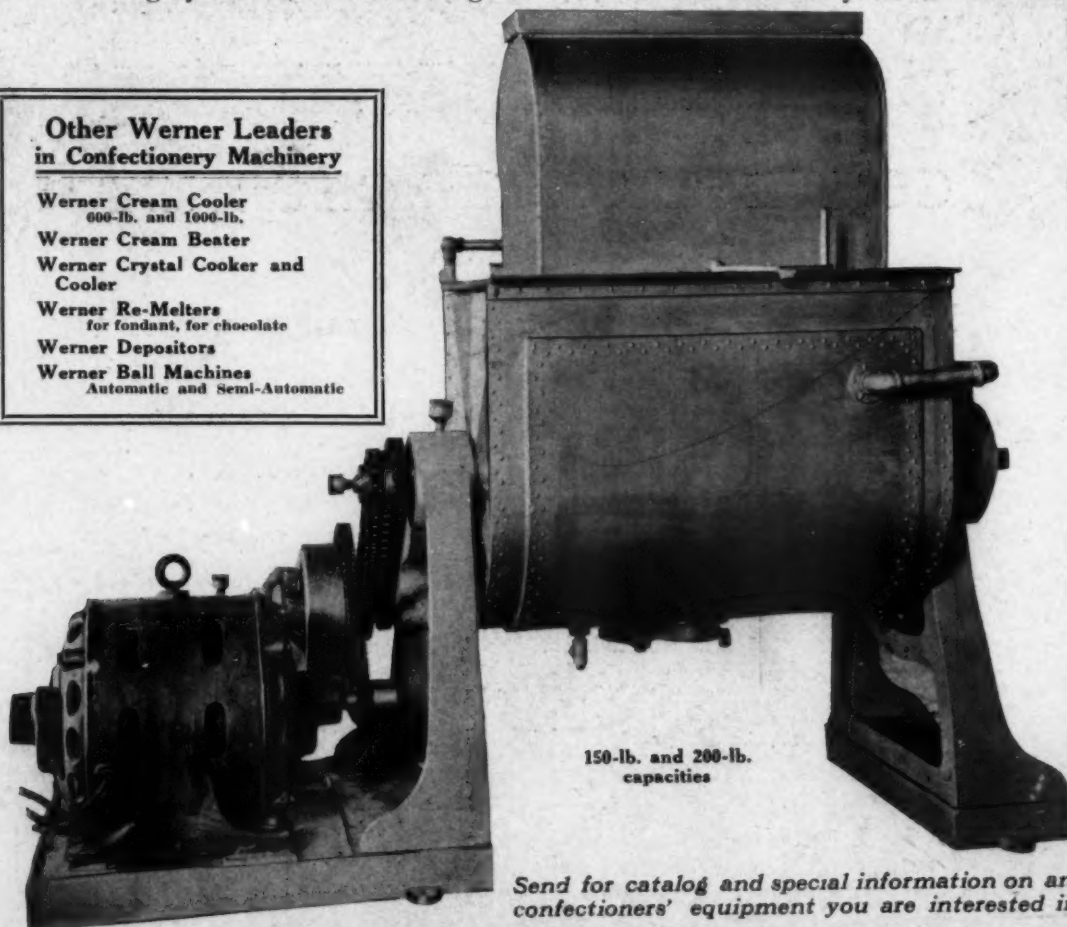
WERNER HEAVY DUTY DOUBLE-ACTION BEATER for volume production of quality Marshmallow



Note the design of beater rake and paddles—no pockets in this beater where part of batch is not thoroughly beaten, which means greater volume and uniformity of marshmallow.

Other Werner Leaders in Confectionery Machinery

Werner Cream Cooler
600-lb. and 1000-lb.
Werner Cream Beater
Werner Crystal Cooker and
Cooler
Werner Re-Melters
for fondant, for chocolate
Werner Depositors
Werner Ball Machines
Automatic and Semi-Automatic



150-lb. and 200-lb.
capacities

Send for catalog and special information on any
confectioners' equipment you are interested in.

JOHN WERNER & SONS, Inc.

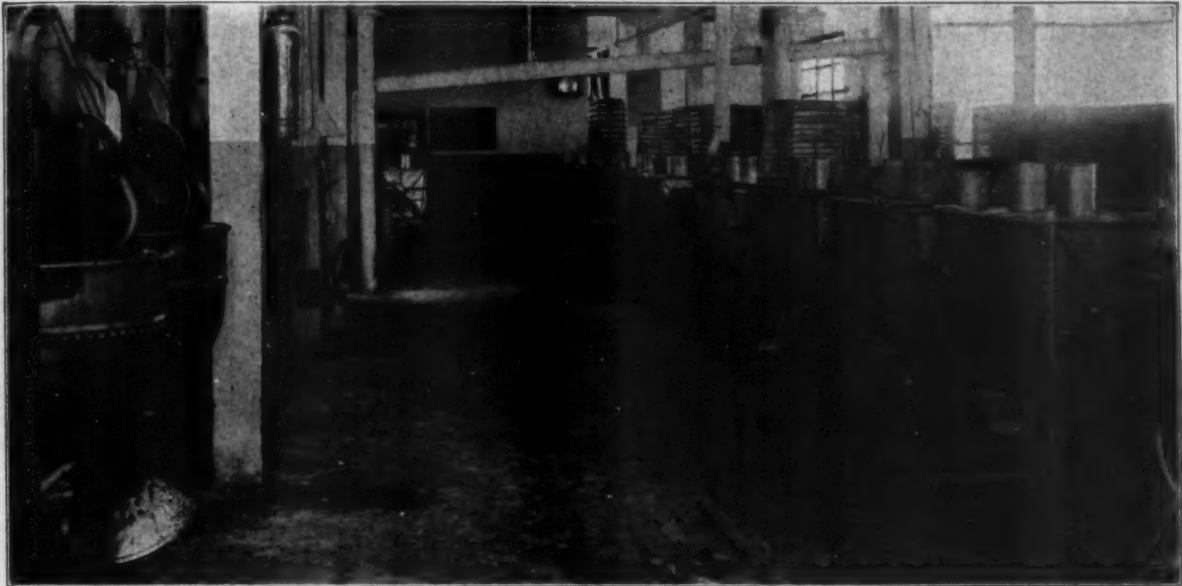
Rochester, N. Y.

NEW YORK CITY: Arthur F. Miller, Alamac Hotel, 72nd and Broadway

on each box" with the Marshmallow Beater



quoted from a letter from A. B. Mewhinney Co., Inc.



One Section of a Typical Modern Marshmallow Department. This View Shows Only One Wing of a Battery of Twenty-Five Savage Improved Marshmallow Beaters Installed in One of the Leading Confectionery Plants.

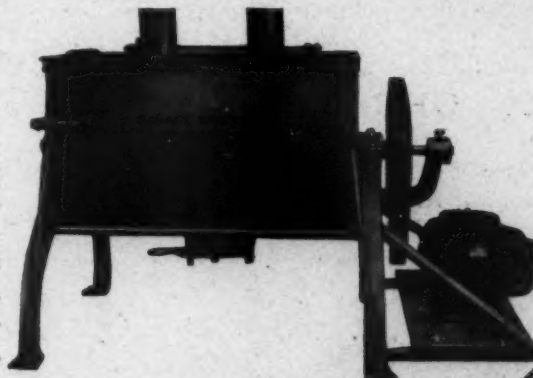
EXPERIMENTING with Marshmallow Beaters is both troublesome and expensive.

Why then, not profit from the fortunate experience of hundreds of satisfied Savage customers who use the Savage Latest Improved Marshmallow Beater exclusively for making high grade marshmallow?

Savage Latest Improved Marshmallow Beaters are rapidly replacing all others in factories where the service is severe and where a quick acting and dependable Beater is essential.

Savage Latest Improved Marshmallow Beaters save their initial cost shortly after their installation by economy of operation and volume of product, and then continue to add their balance of credit as time goes on.

Write today for prices.



**SAVAGE
BROS. CO.**
2638 Gladys Ave.,
Chicago

Send us prices and descriptive literature on your equipment for marshmallow work.

Also quote on

☐ Send complete catalog of Candy Machinery, Tools and Utensils.

Name

Address

BROS. CO.

Chicago, Illinois

Your Problems

Solved Without Charge by Our New Research and Service Department—

Perhaps you have a candy-making problem that has been baffling you and causing considerable loss.

Put it up to our Research and Service Department, headed by one of the leading candy experts in the country. His personal advice is yours for the asking—there is no charge or obligation.

This department is equipped to furnish you any information you may wish about gelatine in candy-making. In the interests of texture, flavor, appearance, economy and food value you will want to know more about this valuable ingredient.

Address our Research and Service Department, telling what kinds of candy you make. You will get suggestions from them that will be very much worth your while. Write today.

“Grade Plus” Means Economy in Gelatine

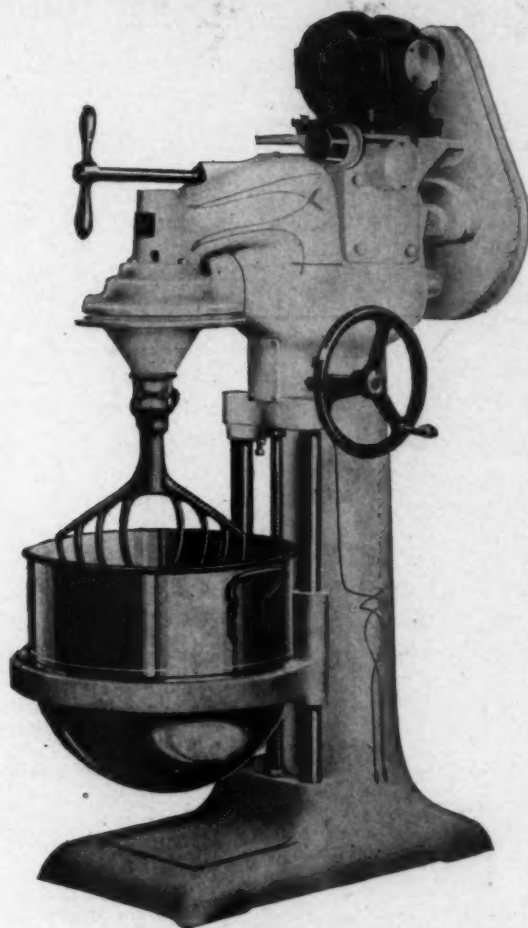
Compare Atlantic *Super-Clarified* Gelatine, grade for grade, with other gelatines. Then you will know the meaning of “grade plus”—extra purity, clarity, uniformity and viscosity in every grade.

ATLANTIC GELATINE COMPANY
WOBURN, MASSACHUSETTS

Chicago: Suite 510, 118 N. La Salle Street
New York: Room 92, 1 Hudson Street

ATLANTIC *Super-Clarified* GELATINE

Be Sure You Get a Read



Produces a
Lighter, Fluffier Marshmallow
with a
15% Increase in Volume

Write for a Catalog

READ MACHINERY CO. - YORK, PA.

When the Starch is right—the



Photo Courtesy Dilling & Co., Indianapolis

From photograph of the installation of a Huhn Starch Conditioning Unit—a Huhn Continuous Starch Dryer and a Huhn Cooler hooked up, one above the other, so the starch passes through them and is dried, sterilized and cooled to the exact degree of temperature and moisture content desired.

This close control of the condition of the starch, by continuous process, automatically solves most of the marshmallow problems. The Huhn System has proven to be the biggest single factor in eliminating marshmallow troubles and placing the manufacture of starch cast goods on a modern production basis: greater tonnage of better, uniform quality at much lower manufacturing cost.

A. HUHNS MANUFACTURING CO., 3915 Hiawatha Ave

the Marshmallows come out right

*How to have clean, dry, cool starch
at all times—ideal for marshmallow*

THE Huhn System of drying and cooling starch is a continuous process by which starch is handled (conveyed) automatically from the mogul thru the sifter, the drying drum, the cooling drum and back to the mogul clean and dry for the boards again **all in less than ten minutes**. That allows a continuous volume production which has heretofore been impossible.

Furthermore, the Huhn System permits a very **close control of temperature and moisture content** which insures a uniformity and quality of starch cast goods never before approached in the history of the confectionery industry.

And what's more, this quantity and quality production is obtained at tremendous savings in costs occasioned by eliminating dry rooms, also only one-third the amount of starch and a third the number of boards is required—all boards are in cast at all times.

When you write us for catalog kindly state the kind of goods you are running in starch.

awatha Ave., MINNEAPOLIS, MINN.

Among those who have equipped their starch department with Huhn Conditioning Machinery:

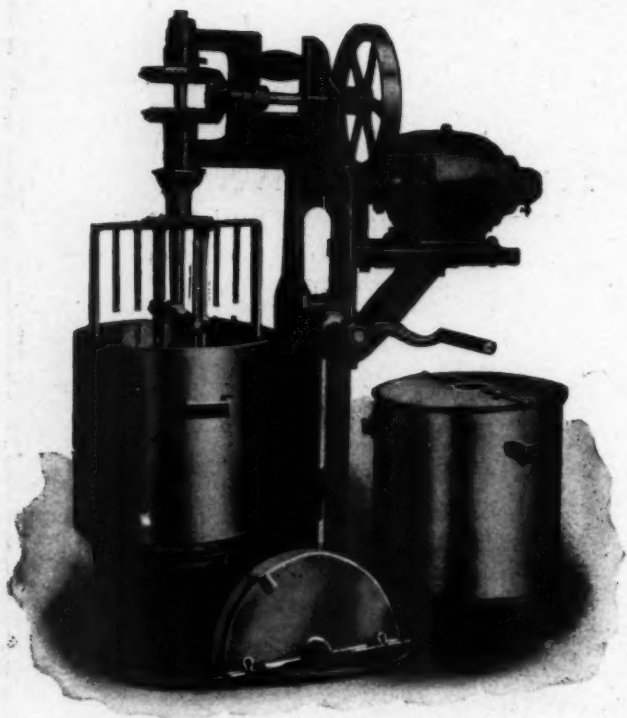
The Shotwell Manufacturing Company, Chicago
The Crackerjack Company.....Chicago
E. H. Edwards Company.....Chicago
DeLuxe Mallow Company.....Chicago
E. J. Brach & Sons.....Chicago
Farley Candy Company.....Chicago
Fred Amend Company.....Chicago
The Campfire Company,
.....Milwaukee and Cambridge
Eline's, Inc. (Gum Dept.).....Milwaukee
Kibbe Brother Company.....Springfield, Mass.
Henry Heide, Inc.....New York
Mason Au Magerheimer Company....Brooklyn
Lofts, Inc.New York
Dilling & Company.....Indianapolis
Hardie Brothers.....Pittsburgh
National Candy Co.....(Mt. Clemens Factory)

THOMAS MILLS & BRO., Inc.

1301 to 1315 NORTH EIGHTH STREET,

PHILADELPHIA

ESTABLISHED 1864



No. 20 VERTICAL DOUBLE ACTION MIXING MACHINE

TWO CANS

The standard, used in all the largest plants for Marshmallow, Icing and Nougat.

Built with light rods for Icing and Light M. M.

Heavy rods for heavy M. M. and Nougat.

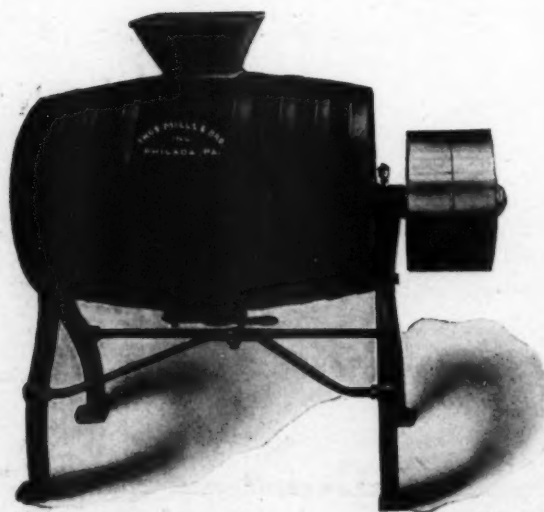
All gears fully covered.

Also built with three speed cone pulleys.

Send for circular

BARREL MIXER

Built for those making sheetings who prefer a quick delivery through outlet. Built with and without brass stuffing boxes.



OUR CATALOG OF CONFECTIONER'S EQUIPMENT SENT ON REQUEST

They All Look Alike

WHEN THEY'RE FRESHLY MADE—

We Mean Marshmallows



But what assurance have you that your marshmallows will stay soft and tender and not become dry and tough after they have been shipped?

Marshmallows to meet the popular demand must be soft, tender and sweet.

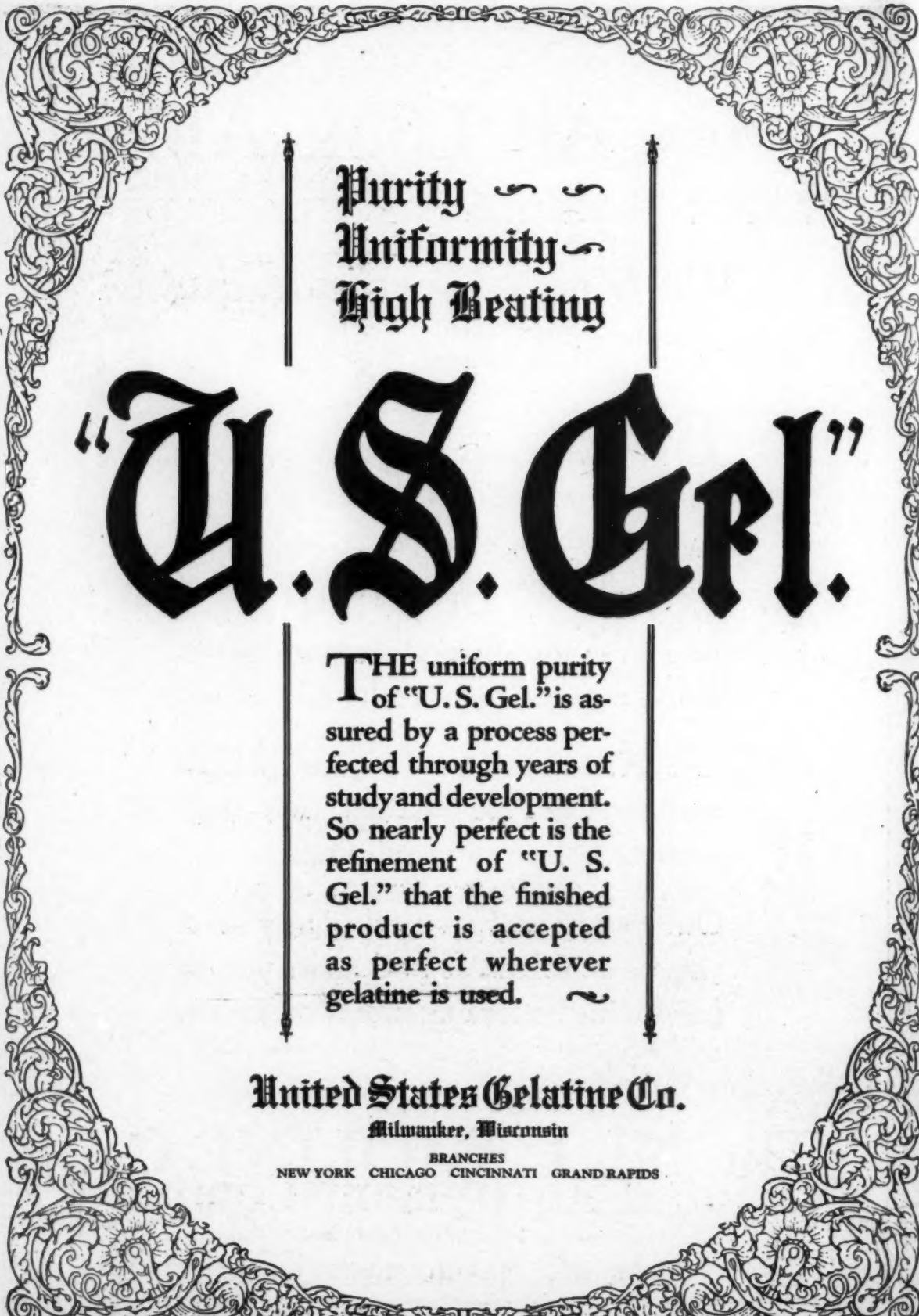
Use **Nulomoline** in your marshmallows and be assured that they will meet all three requirements.

Our candy makers will gladly send you basic formulas and assist you in producing better marshmallow goods.

The NULOMOLINE Co.

109-111 Wall Street

New York, N. Y.



Purity ~ ~
Uniformity ~
High Beating

"U. S. Gel."

THE uniform purity of "U. S. Gel." is assured by a process perfected through years of study and development. So nearly perfect is the refinement of "U. S. Gel." that the finished product is accepted as perfect wherever gelatine is used. ~

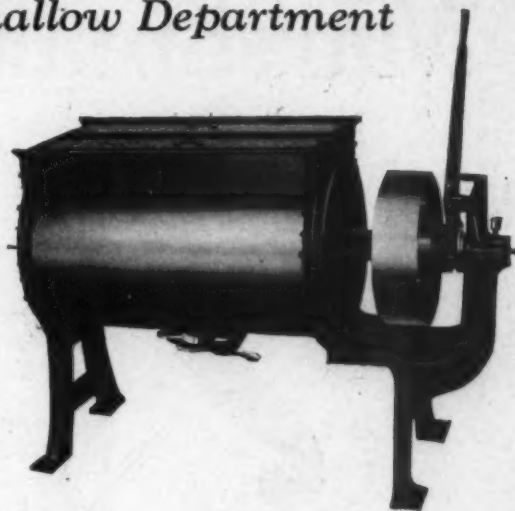
United States Gelatine Co.
Milwaukee, Wisconsin

BRANCHES
NEW YORK CHICAGO CINCINNATI GRAND RAPIDS

Modernize Your Marshmallow Department

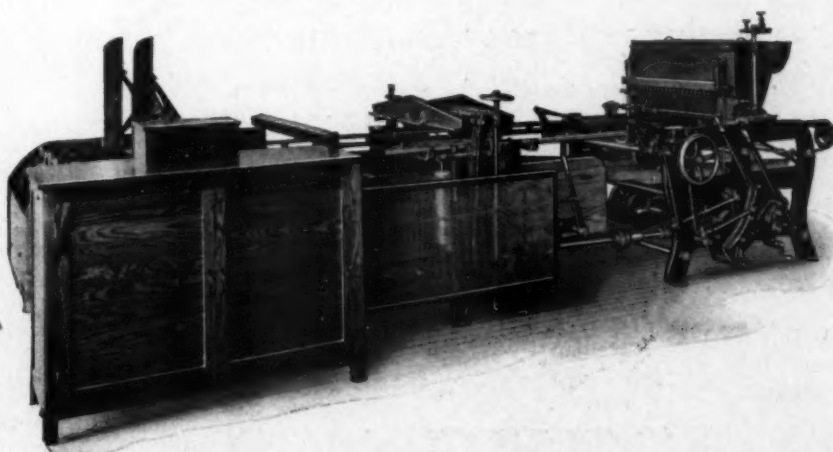
Springfield MARSHMALLOW BEATER

This beater produces a greater yield of high grade marshmallow in less time. Beats quickly and efficiently either hot or cold process marshmallow. Temperature controlled at all times. Complete aeration assured — 150-pound capacity—easily and quickly cleaned.



Springfield Marshmallow Unit *Designed Especially for Marshmallow Work*

A new adaptation of the Automatic Wood Mogul particularly adapted to economical handling of marshmallow work. Has automatic feed to the Depositor. Operated by two men.



If you are producing marshmallow goods regularly, you should have both of these machines to insure a minimum cost of production. Write us for full details.

National Equipment Company



Largest Manufacturer in the World of Candy and Chocolate Machinery

Springfield, Massachusetts, U.S.A



Marshmallow Troubles

What Are Yours



Heavy Crusts?
Going Stale?
Too Chewy?
Poor Color?
Graining Out?
Falling?
No Life?
Drying Out?



All of these troubles are being successfully worked out every day at Mellon Institute of Industrial Research
A Service Rendered to Gelatine Users

Write to
DR. W. W. DUECKER
Essex Research Fellow
Mellon Institute Pittsburgh, Pa.

Essex Gelatine is making Prime Marshmallows without added cost. Order $\frac{1}{8}$ bbl.—32 pounds, for practical usage, that proves its value

Remember



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ESTABLISHED 1903

ESSEX GELATINE COMPANY

Manufacturers

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54 Washington St.

CHICAGO
323 W. Polk St.

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Second and Brannan Streets

ST. LOUIS
400 So. Broadway
LOS ANGELES
412 W. Sixth St.

PHILADELPHIA
708 South Delaware Ave.
SEATTLE
1018-4th Ave., So.

GRAND RAPIDS, MICH.
435 Ionia Ave., S. W.
PORTLAND, ORE.
403 Hoyt Street

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169 Hayes St.
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301 No. Market St.

For Marshmallows:

Use flavors particularly designed for Marshmallow work. We offer several flavors that are extensively used for marshmallow production, that we developed for this particular purpose.

We would like to send you working samples without obligation of the following flavors:

V. C. VANILLA COMPOUND
for Marshmallows

IMPROVED BANANA
for Marshmallows

These flavors work out particularly well and are very economical as to cost.

*Also complete line of
super-Quality Flavors
for the Confectioner.*

VIRGINIA DARE EXTRACT CO., Inc.
10 Bush Terminal, Brooklyn, N. Y.

Send us working samples of the following flavors, without obligation other than to let you know how our test works out.

☐ V. C. VANILLA COMPOUND for Marshmallows.

☐ IMPROVED BANANA for Marshmallows.

Name

Firm

Address

M. & H. Gelatine

Bids Fair To Be Your Choice

Our gelatine is distinctive as a protective colloid, and as an emulsifying agent—properties on which the candy trade depends.

May we submit a generous sample of "M. & H. Special," a gelatine which is ideal for the candy trade?

Milligan & Higgins Gelatine Co.
222-224 Front Street
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WHEEL DRIED GELATINE

**UNITED CHEMICAL & ORGANIC
PRODUCTS COMPANY**
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401 E. 45th St. P. O. Box 1576 311 California St.

Factors That Control the Keeping Qualities of Confectionery

Report of an Investigation of Candy Storage Conditions in Pittsburgh, with Special Reference to MARSHMALLOWS

by **Werner W. Duecker, Ph. D.**

*Essex Fellow, Mellon Institute of Industrial Research,
University of Pittsburgh, Pittsburgh, Pa.*

THE life insurance agent, when he calls on you and attempts to sell you a new policy, has in his pocket a carefully prepared table, called a mortality table, by means of which he can tell you just how many more years you are expected to live.

Would it not be advantageous if the candy manufacturer could supply each of his salesmen with a mortality table for every kind of candy he is selling? The salesman could then intelligently advise the jobber how to buy, the jobber could inform the retailer how much of each kind of candy he should carry in stock, and much of the problem of stale goods and returned goods would be solved.

Everything has a normal span of existence or period of usefulness. Some things, such as the radium we hear so much about, may last millions of years; but other articles, such as the machinery in your plant or the automobile you are driving, wear out in much shorter periods of time. Candy, although it does not wear out, has a normal life or period of usability. When first prepared, the candy may be delectable, but then, as time goes on, certain changes take place and soon it becomes unpalatable for human consumption. Such candy is said to have become stale. This ageing or staling process is more or less definite and varies with the different kinds of candy. Hard candies, if properly made, will keep almost indefinitely, while certain other varieties of candy will stay fresh only relatively short periods of time.

The life of each particular piece of candy is dependent more or less upon two main factors. First of all, it depends upon the composition of the candy, and, secondly, upon the environment to which it is subjected. Since these factors are controllable, the manufacturer should be able to

make candy which would have a very long life, if it were not for the fact that he can control the environment of his product only as long as it is in his plant. After the candy leaves his factory, he has little or no control over the storage and other conditions which his product encounters. Probably he will protect one or more of his special products by carefully placing them in packages which will shield the candy from the weather. But he cannot so protect all of his goods. The best he can do is to so prepare his candy that it will possess as long a life as possible, under adverse conditions.

Survey of Retail Candy Outlets in Pittsburgh

In order to determine the conditions under which candies are stored and sold, a survey has been made of the stores located in the city of Pittsburgh which are interested in the sale of candy. The idea in mind was to acquire knowledge that would enable the accurate determination of how candies, especially marshmallows, that is, the so-called white marshmallow drop, are stored in these shops, and to ascertain, if possible, the probable life of such confections under the conditions encountered.

During the month of September, a survey was made of the stores which would probably sell marshmallows. In each an endeavor was made to secure data regarding the keeping qualities of marshmallows, special attention being given to the comments each shopkeeper made regarding the sale of this confection. In order to facilitate the discussion, the stores visited were classified and the findings in each group will be considered separately.

In a subsequent article the writer will deal with the effect of weather variations on candy and will present a series of maps that will indicate the general nature of the

meteorological influence on confectionery storage throughout the country.

Drug Stores

Drug stores may be divided into two groups, namely, the chain stores and the independents. All of them sell marshmallows and prefer packaged goods, although the chain stores will sometimes feature certain brands and sell them in bulk. The independents, however, seldom sell bulk marshmallows. Although none of the managers prefers one certain brand, they all favor the marshmallow which is packed in a small, round tin can and sells for about fifteen cents. The reasons are as follows: first, the small tin package can be used in making an attractive window display; secondly, such a package always is presentable, and, thirdly, as these men claim, marshmallow stays fresh longer in a sealed tin container. All the managers complain of the fact that the small package covered with waxed paper soon becomes dirty, because the dust which always accumulates is rubbed into the waxed surface, making the package appear dirty even though it may have been in the store only a very short time. The customer supposes that a dirty, dusty package is an old package and will refuse to accept such an article.

The marshmallows in these stores are usually kept in or on top of showcases and are always prominently displayed. Bulk marshmallows, when sold, are featured by displaying them in open tins or boxes and are disposed of rapidly. The managers have no serious complaints regarding their marshmallows becoming unsaleable, due probably to the fact that the packaged marshmallow is protected from the weather and may be kept for comparatively long periods of time, and that bulk marshmallows are kept only short periods of time.

Delicatessen Stores

The delicatessen stores usually sell only packaged marshmallows and their managers say that they can keep their marshmallows for several months in a saleable condition. Packaged marshmallows purchased in such an establishment, and which had been kept for five months, were decidedly old and unfit for consumption. Bulk marshmallows, when displayed, are kept in glass jars.

Candy Stores

The typical down-town candy store of the present is usually operated and controlled directly by a local manufacturer or

through a branch factory. Since here the manufacturer-retailer exercises control over his product up to the time it reaches the consumer, one would hardly expect to find stale candies in this type of store. Most of them sell bulk marshmallows, but only in comparatively small quantities.

There are at present very few independent candy stores in Pittsburgh, and these are usually operated by Greeks or Italians who have a sort of combination store in which they sell candy, baked goods, etc. These men, although they make a great deal of their own candy, do not manufacture their own marshmallows. All of them sell one particular brand of marshmallow in bulk and claim that it is the best available. They store these marshmallows in glass jars, and maintain that they never have old, stale marshmallows and can easily keep them for a period of four months.

Ten-Cent Stores

The ten-cent stores must sell enormous quantities of all kinds of candies, as their candy counters are nearly always crowded. The marshmallows on display are generally kept in large trays, more or less in the open, and are usually fresh. It is difficult to obtain from the ten-cent store managers any explicit information regarding the keeping qualities of their candies. The fact that their candies usually are fresh seems to indicate that they have little trouble with stale merchandise, due, no doubt, to their rapid turnover.

Grocery Stores

The largest quantity of marshmallows are probably sold by grocers. The chain stores usually sell bulk marshmallows, although they will also sometimes feature sales on packaged goods. The marshmallows, which are kept in loosely covered glass jars, are usually always fresh. Stale marshmallows are evidently very rare, because of the fact that these stores generally have a well thought out buying program and their turnover is great.

The independent grocer usually keeps bulk marshmallows, which are stored in five-pound tins or glass jars. Staleness again seems to be rare, some of the grocers claiming that they can keep their marshmallows several months. Some of the large independent grocers market their marshmallows under their own brand and maintain that they never have a marshmallow more than two weeks old in their stores. These same grocers will also tell you that although they have noticed no

definite seasonal demand for marshmallows, they find that they can always sell enormous quantities of marshmallows if they are properly displayed.

Candy Jobbers

The candy jobber takes the marshmallows or candies as he receives them from the manufacturer and stores them wherever space is available in his establishment. The boxes are not opened and the confectionery is not exposed directly to the weather, but no provision is made to give special care and attention to the different kinds of candy he has in stock. Sometimes his store rooms are heated and sometimes not. Generally the jobber tries to anticipate the demand for certain kinds of candy

and only stocks just enough of it to satisfy the demand. Sometimes, however, his anticipations do not materialize and then he will store certain confections for several months.

According to Pittsburgh candy jobbers, marshmallows are a seasonal article enjoying their greatest popularity during the summer months, that is, from April to October. During the winter months, due to the cold weather, marshmallows become hard and tough. The tin package so commonly used at present evidently gives ample protection against ageing, but, as is apparent, offers little or no protection against changes in temperature. Most of the jobbers interviewed have not experienced any serious difficulties with the ageing of marshmallows.

DISCUSSION

From the results of this survey the following facts are apparent:

1. Marshmallows are sold in nearly every store that handles candy.
2. The greatest quantity of marshmallows are sold in bulk.
3. Most of the bulk marshmallows are sold by grocery, candy and ten-cent stores.
4. Specialty shops, such as drug stores and delicatessen stores, prefer the packaged marshmallow.
5. Drug stores prefer the small tin package, because it stays clean and can be used in making attractive window displays.
6. Marshmallows packed in a waxed paper covered carton are objected to because the waxed paper is so easily soiled.
7. There is no decided preference for any one brand of marshmallow.
8. Bulk marshmallows are usually stored in five-pound tin cans, in glass jars or in open trays.
9. Ageing of marshmallows seems to be a matter of little concern to the retailer.
10. The hardening and toughening of marshmallows during the cold weather is a matter of concern to the retailer and also to the jobber.
11. Marshmallows are a seasonal article of trade.

Generally marshmallows are considered of but little consequence by the retailer and therefore do not attract the attention that they deserve. The usual impression is that they are a seasonal confection, hav-

ing their outstanding popularity during the picnic season and in the summer months. The housewife is, however, finding increasing uses for marshmallows in salads, desserts, and baking, and therefore it seems unlikely that the sale of marshmallows should be restricted to the summer months. The jobber as well as the retailer have no data to support their belief that marshmallows are sold mostly during the summer. The writer therefore corresponded with a number of marshmallow manufacturers and from them obtained definite information that showed that marshmallows are a seasonal confection. Contrary, however, to the belief of retailers and jobbers of Pittsburgh, the marshmallow, according to the sales records of manufacturers, enjoys the greatest popularity during the winter months, that is, from October to March.

Marshmallows are apt to become tough and hard during the winter, according to the experience of the jobber, but this trouble can be remedied by storing the confection under proper conditions.

Is it not possible that the sale of marshmallows could be tremendously increased by securing the cooperation of the jobber and the retailer, and showing them that marshmallows, instead of being a strictly seasonal confection, as they seem to believe, are really an ideal summer confection and also a valuable aid to the housewife during winter months, when it is so difficult for her to vary her daily menu?

FIVE DANGER POINTS

(Continued from Page 34)

- (c) *Handle gelatine as little as possible.*
- (d) *Clean all used vessels thoroughly, daily.*
- (e) *Discard left-over portions of gelatine solutions at the end of the work period.*

The Beaters and Depositors

Failure to frequently clean beaters and depositors is almost certain to fermentation. Small, unclean areas scarcely discernible may "seed" every batch that passes through this machinery. Cleanliness should be a continuous process, followed up with elaborate cleaning at the end of every work day. Soap and water, elbow grease, steam, and sunlight are the agents leading to best results with machinery. Cleanliness does not shorten the life of machinery, but adds to it, although oiling at greater frequency is called for when elaborate cleaning is carried out frequently.

It is not within the province of the sanitarian to discuss the general merits of cooked and uncooked formulae. From the strictly sanitary point of view the cooked materials are superior in that the high heat utilized tends to kill off yeasts, molds, bacteria, and such contaminators.

The Moulding Starch

The long used process of depositing marshmallows in starch moulds with later periods necessary for marshmallow drying

and starch drying is conducive to unsanitary qualities in the marshmallow. This grows out of the fact that moist starch is an excellent medium for bacterial and fungus growth, to say nothing of the infestation of starches with various forms and stages of insect life. Great need exists for the development of starch drying, starch disinfecting, and starch protecting machinery. An early article will deal with the recent developments in this field which deserve more universal adoption by manufacturers of all starch cast confections—marshmallows in particular.

The Packers' Hands

Thus far, the individual marshmallow has not been touched by human hands. Later, following the shake-out and dusting processes, human contact is in greater evidence. In the sorting and packing of marshmallows, every individual marshmallow may be touched. Inasmuch as workers may become infected with the disease commonly spoken of as "confectioner's itch," it is highly desirable that all workers have medical supervision. Although bacteria of harmful varieties are not liable to survive long exposure under the dry condition of marshmallow, yeast and molds and other parasitic life forms may survive and be carried to the consumer. It is a safe rule to exclude all marshmallow workers suffering from any skin disease.



Traymore Hotel, Atlantic City, Headquarters for N. C. A. Convention Week of May 23rd

Cocoa Beans Soar to New Highs

(Continued from Page 20)

43-43½¢ cocoa butter, while simultaneously buying substantial quantities of Accras at 16¾ and 17¢, furnishes much food for reflection. The whole thing is sordid business.

Where are we being led? That the New York cocoa situation is completely dominated by Liverpool is plainly evident to anyone who has followed the two markets closely. Backed by two of the largest financial institutions in the world, the cocoa and rubber combine might well be termed invincible. These interests have decided quite definitely that this year's haul is to be made on cocoa. It is the smaller market, consequently requires less capital to corner. Besides, the public is getting "wised up" to rubber.

The vaunted control of the world cocoa market which the self-intoxicated dealers had hoped to accomplish through the simple expedient of organizing a New York Cocoa Exchange, has become a thoroughly punctured myth. The dealers are more and more commencing to realize that they have been duped, that they have become mere marionettes in the hands of the expert string-pullers of Liverpool. The fluctuations of the New York Exchange conform to the hourly cables from Liverpool as clay to the hand that molds it, and thus it has become just one more instrument for carrying out the will of the British interests and for the undoing of the American manufacturer.

All hope in the psychological effect of boycott is past. The Combine has read our hand and trumped it. It has decided to close its eyes to whatever happens in America. If the manufacturer will not buy today, he will buy tomorrow—for he has no reserve and *must* buy or shut up shop and go out of business.

But there is still a ray of sunshine filtering through the dark clouds of price oppression. That ray, that hope, lies with the Department of Agriculture. That the success of the corner has already exceeded the expectations of the Combine is due to factors over which they have no control. They maneuvered a similar squeeze last year. The bubble burst when the price reached 11½¢. This year, in the face of increased consumption in the United States, the Department has undertaken to condemn fully *twenty per cent* of all African arrivals. Much of this supply which has arbitrarily been shut off from the American manufacturer is good cocoa. A lightening of the restrictions within the wide discretionary powers of the ruling, would open the flood gates and deluge the market. Failing this, we must face the music until next November and December—too late to be of much assistance this year.

How Washington holds the key to the cocoa situation will be told in next month's issue, an advance proof of which will be mailed to any subscriber on request.

Good-Bye and Good Riddance to the Fighting 69th!

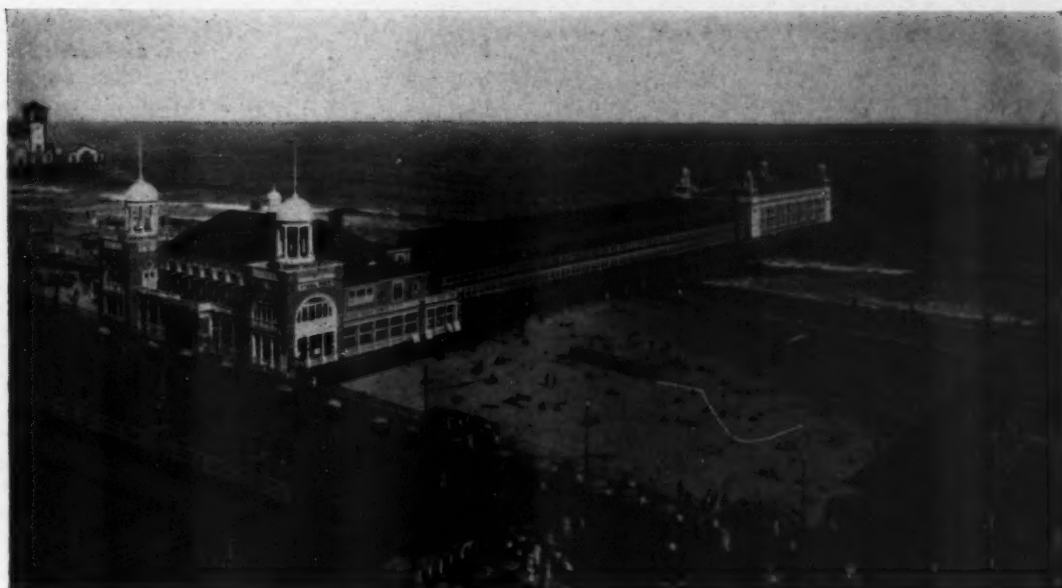
(Continued from Page 19)

of Congress to appropriate compensation for the Radio Commission left it without constitutional authority to function? On with the chaos!

To the confectionery industry, with its manifold interests in the agricultural, industrial and financial legislation recently passed or left pending, this is a day of mixed emotions. That we are not adequately represented at Washington ourselves is too plainly evident to require comment. Unfortunately it is a fact that in a log-rolling, vote-bartering session such as this, none but the most determined and vociferous lobbies can be heard above the

din of political importunings, and since we cannot hope to compete with the powerful lobbies of the coast and middle-west agricultural interests, we must resort to the only legal weapon that remains.

Determine how your senators and congressmen voted on the bills in question. Punish your betrayers at the polls next fall! Know which of the new crop of candidates are working with you. This is not a matter of party lines, but a long, uphill fight against minority blocs and crooked vote compromises, in which Democrats and Republicans are equally culpable. Now is the time to do your stuff!



Fourth Annual Exposition of the N. C. A. on Steel Pier, Atlantic City

While the announcements of the Fourth Annual Exposition of the National Confectioners' Association at Atlantic City, week of May 23rd, were not mailed until February 19th, more than fifty-five firms have taken space in which to exhibit their product. Below is a partial list of firms who have taken space:

United Chemical & Organic Prod. Co., Chicago, Ill.
 Read Machinery Co., York, Pa.
Confectioners' Review, Cincinnati, Ohio.
 MANUFACTURING CONFECTIONER Publishing Co., Chicago, Ill.
 J. W. Greer Co., Cambridge, Mass.
 The Haug Co., New York City.
 Ferguson & Haas, Inc., New York City.
 Essex Gelatine Co., Boston, Mass.
The Confectioners' Journal, Philadelphia, Pa.
 Package Machinery Co., Springfield, Mass.
 Blancke-Baer Extract & Preserving Co., St. Louis, Mo.
 Foote & Jenks, Jackson, Mich.
 H. Kohnstamm & Co., Inc., New York City.
 The Nulomoline Co., New York City.
 Vanilla Laboratories, Inc., Rochester, N. Y.
 B. H. Bunn Co., Chicago, Ill.
 M. A. Brown Paper Box Co., St. Louis, Mo.
 Vacuum Candy Machinery Co., Chicago, Ill.
 Kay-White Products, Inc., New York City.
 Betts Products Co., Chicago, Ill.
 C. M. Pitt & Sons Company, Baltimore, Md.
 Ideal Cocoa & Chocolate Co., Lititz, Pa.
 Sunland Sales Corp. Association, Fresno, Calif.
 The Fleischmann Transportation Co., New York City.
 Henry H. Ottens Mfg. Co., Philadelphia, Pa.
 American Can Co., Chicago, Ill.
 Clinton Corn Syrup Refining Co., Clinton, Ia.
 Finnell System, Inc., Hannibal, Mo.
 Schreiber Products Corp., Buffalo, N. Y.
 United States Foil Company, Louisville, Ky.

Boyle's Publications, Chicago, Ill.
 H. C. Hildreth Co., Boston, Mass.
 Harold A. Sinclair, New York City.
 McGraw Box Co., McGraw, N. Y.
 Mogi, Momionoi & Co., Inc., New York City.
 National Aniline & Chemical Co., Inc., New York City.
 H. O. Wilbur & Sons, Inc., Philadelphia, Pa.
 Union Confectionery Machinery Co., Inc., New York City.
 Thomas W. Dunn Co., New York City.
 Keller-Dorian Paper Co., Inc., New York City.
 Reeves Pulley Co., Columbus, Ind.
 Baker-Perkins Co., Inc., Saginaw, Mich.
 H. Schultz & Co., Chicago, Ill.
 A. D. Shoup Co., Brooklyn, N. Y.
 Pilliod Lumber Co., Swanton, Ohio.
 The Toy Kraft Co., Wooster, Ohio.
 Wm. J. Stange Co., Chicago, Ill.
 Thomas Mills & Bro., Philadelphia, Pa.
 National Equipment Co., Springfield, Mass.
 Bendix Paper Co., New York City.
 Donald F. Duncan, Inc., Chicago, Ill.
 Fred Lauer, Chicago, Ill.
 A. E. Staley Mfg. Co., Decatur, Ill.
 F. J. Schleicher Paper Box Co., St. Louis, Mo.
 A. Huhn Manufacturing Co., Minneapolis, Minn.
 York Manufacturing Co., York, Pa.
 Brunhoff Manufacturing Co., Cincinnati, Ohio.
 L. F. Grammes & Sons, Inc., Allentown, Pa.
 Atlantic Gelatine Co., Woburn, Mass.

Arrangements have been made to stage one of the best expositions the organization has ever held and the interest manifested by the active members is indicative of a large attendance.

The Associated Retail Confectioners of the United States, Inc., will convene at Philadelphia on Monday and Tuesday of Exposition Week and will undoubtedly also attend the Exposition at Atlantic City.

Marshmallow as a Food*(Continued from Page 21)*

prevents the supersaturated sugar solution from setting to a mass of sugar crystals. It is due to this same type of action that gelatine is so effective when used in milk for feeding invalids and infants who present a difficult problem to the pediatrician. Ordinarily, the milk curdles in the stomach, forming rather large and tough curds which many infants have difficulty in digesting. The use of one per cent of gelatine in the milk insures small, soft, and easily digested curds with resulting great benefit to the infant or invalid.

Gelatine is a protein and therefore can contribute to the bodily needs for protein. It has been shown that this protein is not complete and so of itself will not satisfy one's needs for protein. It is about two-thirds as valuable as the more complete

proteins of milk or meat. However, when used with cereals, it helps materially to balance the cereal protein and in this way renders a very valuable service.

The reader must not get the impression that marshmallows are advocated in the case of infants and invalids because of the action of gelatine on the formation of milk curds, or that, because gelatine balances the protein of cereals, the use of a few pieces of marshmallow a day will greatly improve the diet. These statements about the value of gelatine are both interesting, but in spite of them it must be admitted that the chief value of marshmallows as a food rests upon the supply of palatable, easily digested energy in the form of sugars which the marshmallows furnish.

It is hoped that these statements concerning the food value of marshmallows will not detract from but will add to the reader's enjoyment of this excellent confection.

Moulding and Dusting Starch*(Continued from Page 25)*

ten after being exposed six hours. The sample having five per cent moisture at the start absorbed 4.6 times its original moisture content in twenty-four hours; the ten per cent sample 2.4 times its original moisture content in an equal length of time. These tests indicate that the drier starches do not absorb moisture so much more rapidly, but rather that their capacity for absorbing a greater amount is increased in proportion to the degree to which they are redried.

Starch redried to five per cent or below is rather dangerous to handle either in a starch factory or in a candy factory, and we believe also it is unnecessary. A redried starch of seven per cent has proven satisfactory under normal conditions. As the starch is used in the candy factory it must be recleaned and redried. The dry room heat has always been depended upon to do this. However, it often happens that the dry room has not the proper heating capacity, or the circulation and ventilation is inadequate. These conditions have often caused much trouble, the starch being warm but moist and the marshmallow soft and sweaty. The modern installation of mechanical starch dryers which deliver clean, warm, dry starch to the casting trays is to be commended.

Two Grades of Moulding Starch

There are two grades of moulding starch on the market. One is the ordinary grade and the other is called Special Moulding Starch. The regular grade is used to add to that already in use to lighten it when the starch has become too heavy due to taking up sugar and oil from the candy. The Special Moulding Starch is prepared by especial treatment that enables it to take the impression and hold it firmly without the addition of used starch. It is not satisfactory for mixing with used starch that is already too heavy, but is to be used for replacing starch that has become too heavy and dirty.

Dusting Starch

The starch used for dusting the marshmallows does not require any particular properties except that it be a strictly edible product. It must be clean, white, and finely powdered. For this purpose the crude starch is refined, powdered, and bolted through a fine silk bolting cloth having 129 mesh to the inch. This produces a very high grade starch that can be uniformly mixed with powdered sugar and is entirely suitable for dusting any confection. We might add that due to the nature of moulding starch it is not suitable for dusting purposes.

